

PRIMARY MATHEMATICS

Standards
Edition

EXTRA PRACTICE



Name: _____

Class: _____

Contents

Unit 1	Numbers to 10,000	1
Exercise 1A	Thousands, Hundreds, Tens and Ones	5
Exercise 1B	Thousands, Hundreds, Tens and Ones	7
Exercise 1C	Thousands, Hundreds, Tens and Ones	9
Exercise 2	Number Patterns	11
Exercise 3	Rounding Numbers	13
Unit 2	Addition and Subtraction	15
Exercise 1A	Sum and Difference Within 100	23
Exercise 1B	Sum and Difference Within 100	25
Exercise 1C	Sum and Difference Within 100	27
Exercise 2A	Sum and Difference Within 1000	31
Exercise 2B	Sum and Difference Within 1000	35
Exercise 3	Adding Ones, Tens, Hundreds and Thousands	37
Exercise 4	Subtracting Ones, Tens, Hundreds and Thousands	39
Exercise 5	Two-step Word Problems	41
Unit 3	Multiplication and Division	43
Exercise 1	Looking Back	51
Exercise 2	More Word Problems	53
Exercise 3	Multiplying Ones, Tens, Hundreds and Thousands	55
Exercise 4	Quotient and Remainder	59
Exercise 5	Dividing Hundreds, Tens and Ones	61
Unit 4	Multiplying and Dividing by 6, 7, 8 and 9	65
Exercise 1	Multiplying and Dividing by 6	75
Exercise 2	Multiplying and Dividing by 6	79
Exercise 3	Multiplying and Dividing by 7	83
Exercise 4	Multiplying and Dividing by 8	87
Exercise 5	Multiplying and Dividing by 9	91
Unit 5	Data Analysis	93
Exercise 1	Presenting Data	99
Exercise 2	Probability	103
Unit 6	Length	105
Exercise 1	Meters and Centimeters	113
Exercise 2	Kilometers	115
Exercise 3	Yards, Feet and Inches	117
Exercise 4	Miles	119

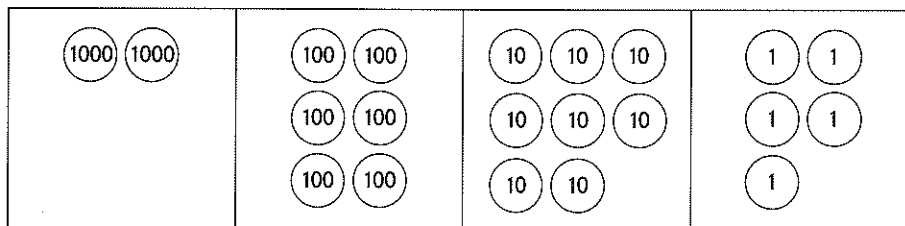
Unit 7	Weight	121
Exercise 1	Kilograms and Grams	127
Exercise 2	Word Problems	131
Exercise 3	Pounds and Ounces	133
Unit 8	Capacity	135
Exercise 1	Liters and Milliliters	139
Exercise 2	Gallons, Quarts, Pints and Cups	143
Unit 9	Money	147
Exercise 1	Dollars and Cents	151
Exercise 2	Addition	153
Exercise 3	Subtraction	159
Exercise 4	Multiplication and Division	163
Unit 10	Fractions	165
Exercise 1A	Fraction of a Whole	175
Exercise 1B	Fraction of a Whole	177
Exercise 2	Equivalent Fractions	181
Exercise 3	Adding Fractions	185
Exercise 4	Subtracting Fractions	187
Exercise 5	Fraction of a Set	189
Exercise 6	Fractions and Money	191
Unit 11	Time	193
Exercise 1A	Hours and Minutes	197
Exercise 1B	Hours and Minutes	201
Exercise 2	Other Units of Time	205
Unit 12	Geometry	207
Exercise 1	Angles	211
Exercise 2	Right Angles	213
Exercise 3	Quadrilaterals and Triangles	215
Exercise 4	Solid Figures	217
Unit 13	Area, Perimeter and Volume	219
Exercise 1	Area	223
Exercise 2	Perimeter	229
Exercise 3	Volume	233
Answers		237

Unit 1 : Numbers to 10,000

Friendly Notes

Thousands, Hundreds, Tens and Ones

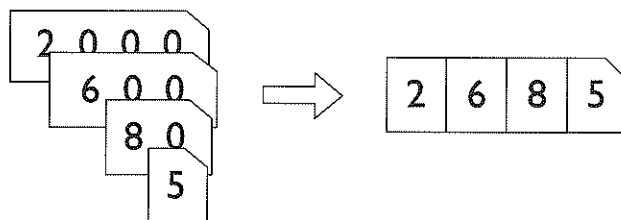
1. Count the thousands, hundreds, tens and ones in this chart.



$$2000 + 600 + 80 + 5 = 2685$$

2685 is the **standard form** of 2685.

$2000 + 600 + 80 + 5$ is the **expanded form** of 2685.



We write 2685 in words as two thousand six hundred eighty-five.

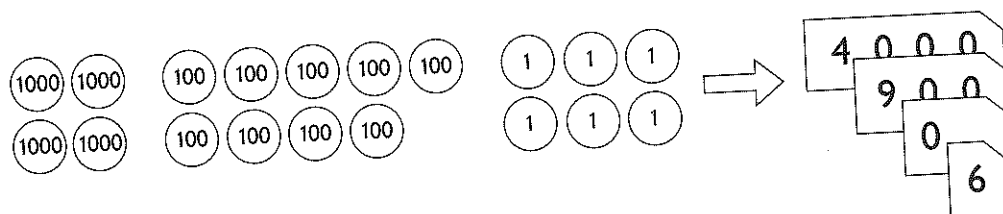
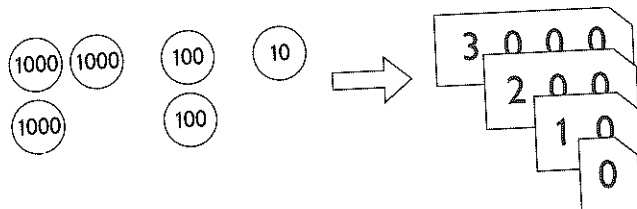
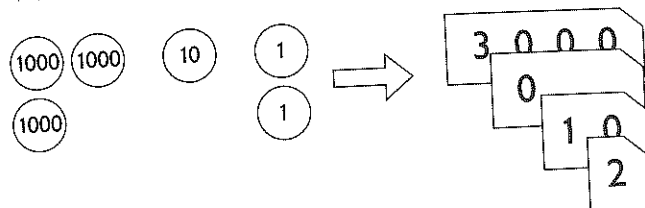


In 2685,
the digit 2 is in the thousands place.
Its value is 2000.
The digit 6 is in the hundreds place.
Its value is 600.
The digit 8 is in the tens place.
Its value is 80.
The digit 5 is in the ones place.
Its value is 5.

2. Compare the numbers 3012, 3210, 4906.

Which is the greatest number?

Which is the smallest number?



Compare the thousands.



4 thousands is the greatest.
So, 4906 is the greatest number.

3012 and 3210 have the same number of thousands.
Compare the hundreds.



0 hundreds is less than 2 hundreds.
So, 3012 is the smallest number.

Arranging the numbers in order beginning with the smallest, we have 3012, 3210, 4906.

Number Patterns

In a number pattern, we first find out how the given numbers are related to one another to find the missing numbers.

1. 1202, 1204, 1206, _____

We add 2 to get the next number.
So, the missing number is 1208.

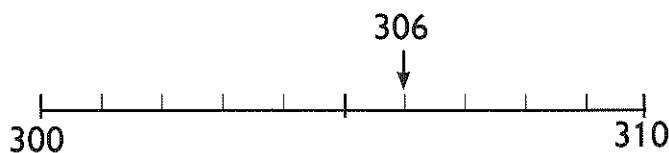
2. 2894, 2794, 2694, _____

We subtract one hundred to get the next number.
So, the missing number is 2594.

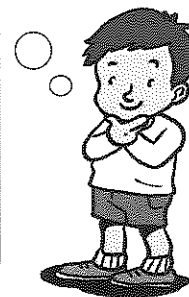


Rounding Numbers

1. Round 306 to the nearest ten.

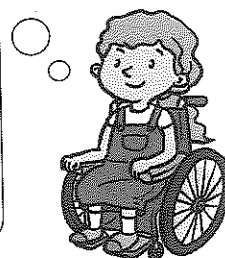
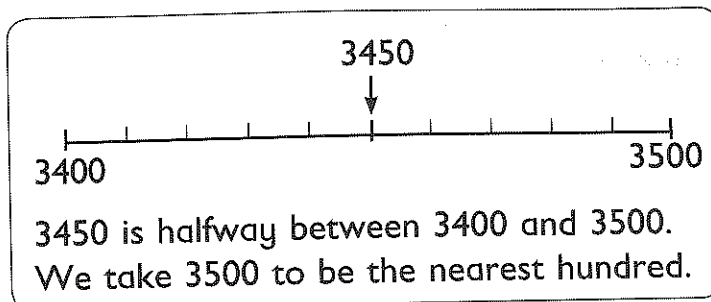


306 is between 300 and 310.
It is nearer to 310 than to 300.
So, the nearest ten is 310.



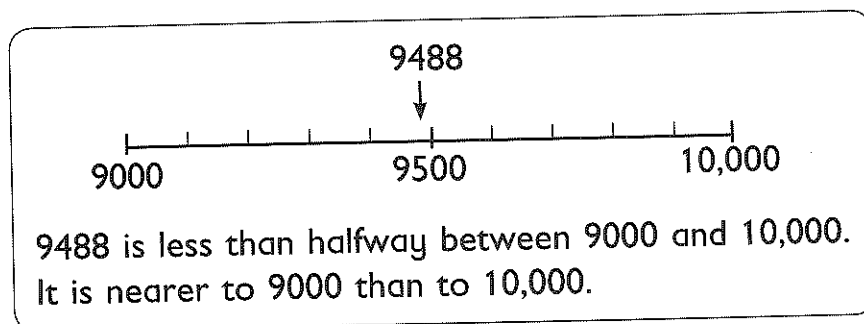
306 is 310 when rounded to the nearest ten.

2. Round 3450 to the nearest hundred.



3450 is 3500 when rounded to the nearest hundred.

3. Round 9488 to the nearest thousand.



9488 is 9000 when rounded to the nearest thousand.

Exercise 1A : Thousands, Hundreds, Tens and Ones

1. Write the numbers.

(a)

A rectangular box contains base ten blocks. There are three circles labeled '1000', one circle labeled '100', and four circles labeled '1' arranged in two columns of two. Two lines connect the right side of the box to an empty rectangular box on the right.

(b)

A rectangular box contains base ten blocks. There are seven circles labeled '1000', two circles labeled '10', and five circles labeled '1' arranged in three rows. Two lines connect the right side of the box to an empty rectangular box on the right.

2. Write the numbers.

(a)	two hundred four	
(b)	three thousand, seven hundred eleven	
(c)	four thousand, nine	
(d)	one thousand, five hundred	
(e)	five thousand, two hundred forty-three	



3. Write the numbers in words.

(a)	520	
(b)	3805	
(c)	5001	
(d)	6043	
(e)	7290	
(f)	9018	

4. Write the missing numbers.

(a) $208 = \boxed{} + 8$

(b) $1379 = 1000 + 300 + \boxed{} + 9$

(c) $3801 = 3000 + 800 + \boxed{}$

(d) $4625 = \boxed{} + 600 + 20 + 5$

(e) $7045 = 7000 + \boxed{} + 5$

(f) $9876 = 9000 + \boxed{} + 70 + 6$

Exercise 1B : Thousands, Hundreds, Tens and Ones

1. Fill in the blanks.

Thousands	Hundreds	Tens	Ones
4	3	1	5

(a) 4315 is a 4-digit number.

It is made up of _____ thousands, _____
hundreds, _____ ten and _____ ones.

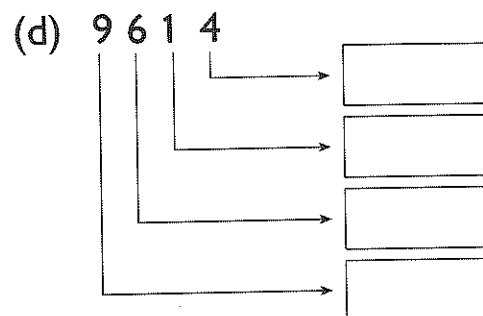
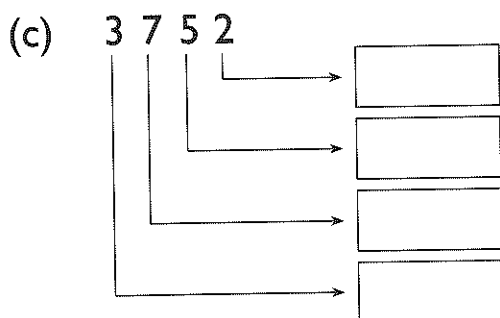
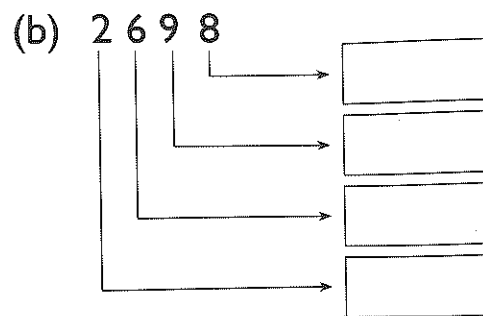
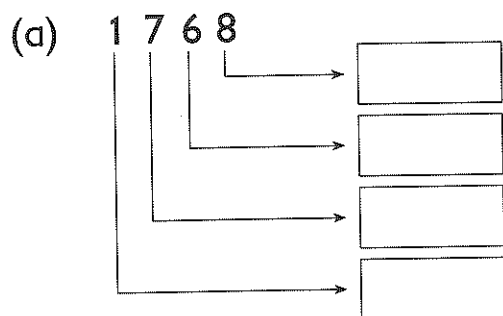
(b) In 4315, the digit **4** stands for _____.

(c) In 4315, the digit **3** is in the _____ place.
Its value is _____.

(d) In 4315, the digit _____ is in the **tens place**.
Its value is _____.

(e) In 4315, the digit _____ is in the **ones place**.
Its value is _____.

2. What does each digit in each of the following numbers stand for?



3. What does the digit 3 in each of the following numbers stand for?

(a) 3817 _____

(b) 8013 _____

(c) 9326 _____

(d) 4530 _____

Exercise 1C : Thousands, Hundreds, Tens and Ones

1. Circle the greater number.

- (a) 2015 2186
(b) 6137 8137
(c) 5766 6857
(d) 2352 2382

2. Circle the smaller number.

- (a) 5781 9871
(b) 6624 6824
(c) 8107 8017
(d) 9532 9563

3. Write $>$, $<$ or $=$ in each \bigcirc .

- (a) 1263 \bigcirc 2263
(b) 4872 \bigcirc 4960
(c) 5797 \bigcirc 5777
(d) 6091 \bigcirc 6084

4. Arrange the numbers in order.

(a) Begin with the smallest.



_____, _____, _____, _____

(b) Begin with the greatest.



_____, _____, _____, _____

Exercise 2 : Number Patterns

1. Fill in the blanks.

- (a) _____ is 10 less than 1049.
- (b) _____ is 10 more than 1806.
- (c) _____ is 100 less than 3690.
- (d) _____ is 100 more than 4892.
- (e) _____ is 1000 less than 9074.
- (f) _____ is 1000 more than 7001.

2. Fill in the blanks.

- (a) 3812 is _____ more than 3811.
- (b) 3812 is _____ more than 3802.
- (c) 3812 is _____ more than 3712.
- (d) 3812 is _____ more than 2812.

3. Fill in the blanks.

- (a) 7659 is 1 less than _____.
- (b) 7659 is 10 less than _____.
- (c) 7659 is 100 less than _____.
- (d) 7659 is 1000 less than _____.

4. Complete the regular number patterns.

- (a) 4010, 4020, 4030, _____, 4050
- (b) 4010, 4110, 4210, _____, 4410
- (c) 4010, 5010, 6010, _____, 8010
- (d) 4010, 4011, 4012, _____, 4014

5. Complete the regular number patterns.

- (a) 9253, 9252, 9251, _____, 9249
- (b) 9253, 9243, 9233, _____, 9213
- (c) 9253, 8253, 7253, _____, 5253
- (d) 9253, 9153, 9053, _____, 8853

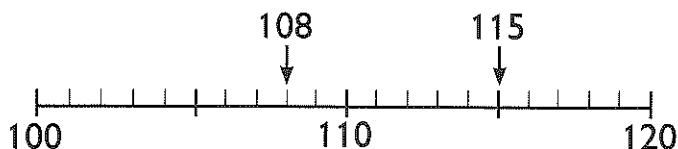
6. Complete the regular number patterns.

- (a) 6055, 6155, _____, _____, 6455
- (b) 5361, _____, _____, 8361, 9361
- (c) 2409, _____, 2389, 2379, _____
- (d) _____, 1068, 2068, _____, 4068
- (e) 9652, _____, 7652, 6652, _____
- (f) _____, 3626, 3526, _____, 3326

Exercise 3 : Rounding Numbers

1. Round to the nearest ten.

Fill in the blanks.



- (a) 108 is between 100 and _____.

108 is nearer to _____ than to _____.

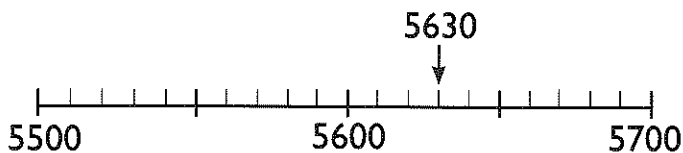
108 is _____ when rounded to the nearest ten.

- (b) 115 is halfway between _____ and _____.

115 is _____ when rounded to the nearest ten.

2. Round to the nearest hundred.

Fill in the blanks.



5630 is between 5600 and _____.

5630 is nearer to _____ than to _____.

5630 is _____ when rounded to the nearest hundred.

3. Round each number to the nearest ten.

(a) 321

(b) 468

(c) 595

(d) 1018

(e) 3622

(f) 4759

4. Round each number to the nearest hundred.

(a) 1568

(b) 9084

(c) 3146

(d) 2288

(e) 7604

(f) 5550

5. Round each number to the nearest thousand.

(a) 6214

(b) 9294

(c) 4581

(d) 8500

(e) 3899

(f) 2916

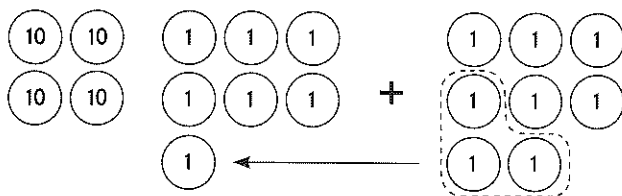
Unit 2 : Addition and Subtraction

Friendly Notes

Sum and Difference Within 100

We add to find the sum.

1. Find the sum of 47 and 8.



$$\begin{array}{r} 47 + 8 \\ \swarrow \quad \searrow \\ 3 \quad 5 \end{array}$$

$$47 + 8 = 55$$

Make a 10 first.

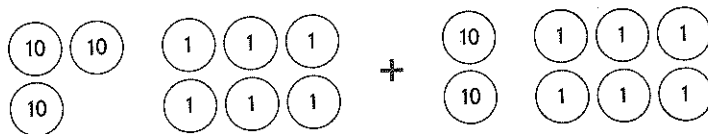
$$\begin{array}{r} 47 + 8 \\ \swarrow \quad \searrow \\ 3 \quad 5 \end{array}$$

$$47 + 3 = 50$$

$$50 + 5 = 55$$



2. Find the sum of 36 and 26.



$$36 \xrightarrow{+20} 56 \xrightarrow{+6} 62$$



$$36 + 26$$

$$20 \quad 6$$

Add 20 to 36 first.

$$56 + 6$$

$$4 \quad 2$$

$$56 + 4 = 60$$

$$60 + 2 = 62$$



$$36 + 26 = 62$$

3. Add 35 and 59.

59 is one less than 60.

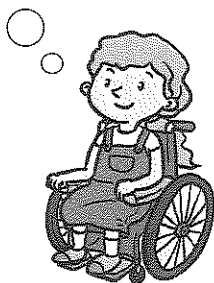
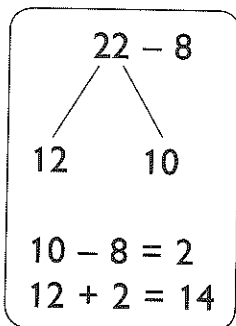
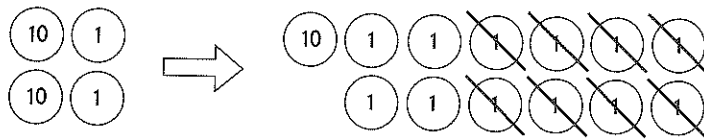
$$35 \xrightarrow{+60} 95 \xrightarrow{-1} 94$$



$$35 + 59 = 94$$

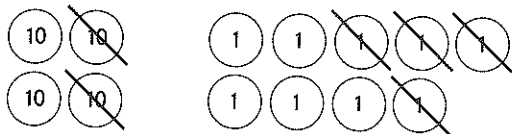
We subtract the smaller number from the greater number to find the **difference**.

4. Find the difference between 22 and 8.



$$22 - 8 = 14$$

5. Find the difference between 49 and 24.



$$49 \xrightarrow{-20} 29 \xrightarrow{-4} 25$$

$$49 - 24 = 25$$

$$49 - 24$$

$$20 \quad 4$$

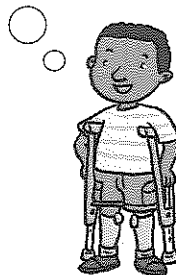
Subtract 20 from 49 first.

6. Subtract 19 from 75.

19 is one less than 20.

$$75 \xrightarrow{-20} 55 \xrightarrow{+1} 56$$

$$75 - 19 = 56$$



Sum and Difference Within 1000

To add two 3-digit numbers, we add the ones first, followed by the tens and then the hundreds.

1. Find the sum of 362 and 259.

Add the ones.

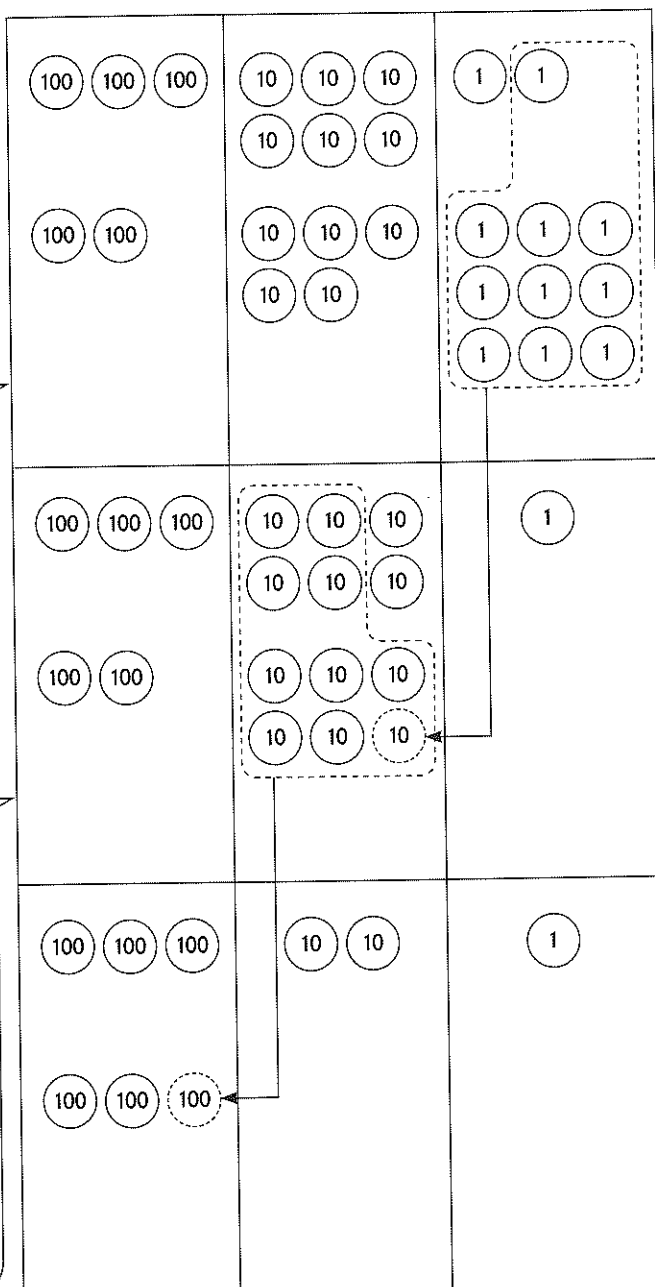
$$\begin{array}{r} 362 \\ + 259 \\ \hline 1 \end{array}$$

Add the tens.

$$\begin{array}{r} 362 \\ + 259 \\ \hline 21 \end{array}$$

Add the hundreds.

$$\begin{array}{r} 362 \\ + 259 \\ \hline 621 \end{array}$$



10 ones
make
1 ten.



10 tens
make
1 hundred.



followed

To find the difference between two 3-digit numbers, we subtract the ones first, followed by the tens and then the hundreds.

2. Find the difference between 362 and 259.

10 ones
make
1 ten.



10 tens
make
1 hundred.



Subtract the ones.

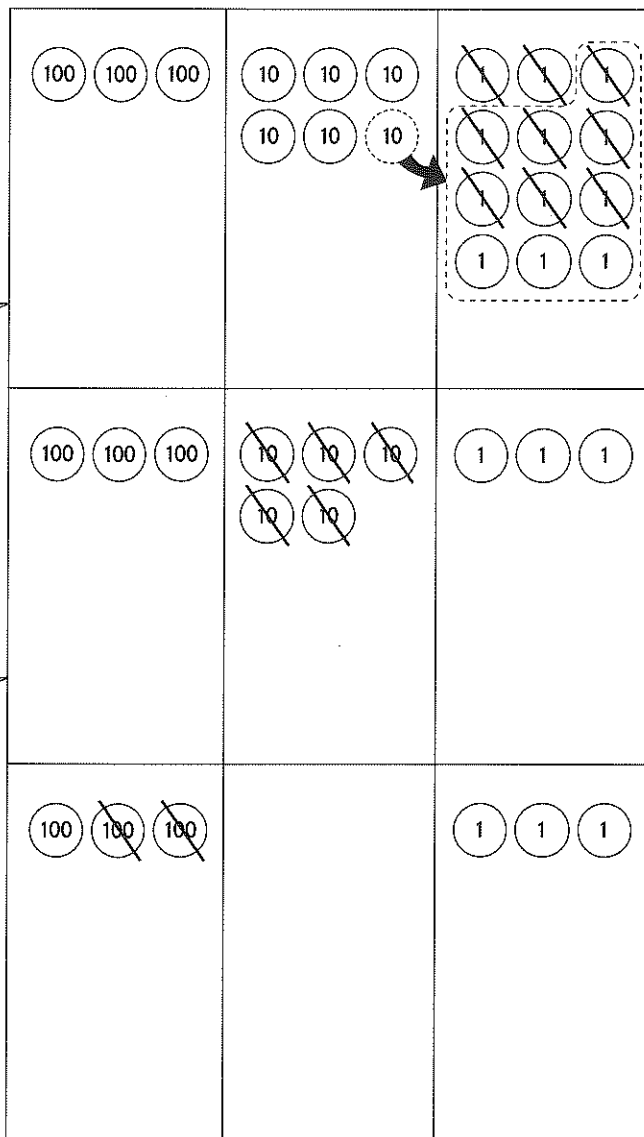
$$\begin{array}{r} \overset{5}{3} \overset{12}{6} 2 \\ - 259 \\ \hline 3 \end{array}$$

Subtract the tens.

$$\begin{array}{r} \overset{5}{3} \overset{12}{6} 2 \\ - 259 \\ \hline 03 \end{array}$$

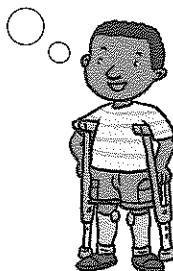
Subtract the hundreds.

$$\begin{array}{r} \overset{5}{3} \overset{12}{6} 2 \\ - 259 \\ \hline 103 \end{array}$$



We can check our
answers with addition.

$$\begin{array}{r} 259 \\ + 103 \\ \hline 362 \end{array}$$



Adding Ones, Tens, Hundreds and Thousands

To find the sum of two 4-digit numbers,

Step 1: Add the ones.

Step 2: Add the tens.

Step 3: Add the hundreds.

Step 4: Add the thousands.

Change 10 ones for 1 ten, 10 tens for 1 hundred, 10 hundreds for 1 thousand when we have more than 10 ones, 10 tens or 10 hundreds to add.

Find the sum of 3098 and 2386.

Estimate the value by rounding to the nearest thousand.

3098 is about 3000.

2386 is about 2000.

$3000 + 2000 = 5000$

The answer should be around 5000.



Add the ones.

$$\begin{array}{r} 3098 \\ + 2386 \\ \hline 4 \end{array}$$

Change 10 ones
for 1 ten.

Add the tens.

$$\begin{array}{r} 3098 \\ + 2386 \\ \hline 84 \end{array}$$

Change 10 tens
for 1 hundred.

Add the hundreds.

$$\begin{array}{r} 3098 \\ + 2386 \\ \hline 484 \end{array}$$

Add the thousands.

$$\begin{array}{r} 3098 \\ + 2386 \\ \hline 5484 \end{array}$$

5484 is close to the estimated answer of 5000.
So, the answer is reasonable.

Subtracting Ones, Tens, Hundreds and Thousands

To find the difference between two 4-digit numbers,

Step 1: Subtract the ones.

Step 2: Subtract the tens.

Step 3: Subtract the hundreds.

Step 4: Subtract the thousands.

Change 1 ten for 10 ones,

1 hundred for 10 tens,

1 thousand for 10 hundreds

when we do not have enough ones, tens or hundreds to subtract from.

Find the difference between 4098 and 1795.

Subtract
the ones.

$$\begin{array}{r} 4098 \\ - 1795 \\ \hline 3 \end{array}$$

Subtract
the tens.

$$\begin{array}{r} 4098 \\ - 1795 \\ \hline 03 \end{array}$$

Subtract the
hundreds.

$$\begin{array}{r} \\ 4098 \\ - 1795 \\ \hline 303 \end{array}$$

Subtract the
thousands.

$$\begin{array}{r} \\ 4098 \\ - 1795 \\ \hline 2303 \end{array}$$

Change 1 thousand
for 10 hundreds.

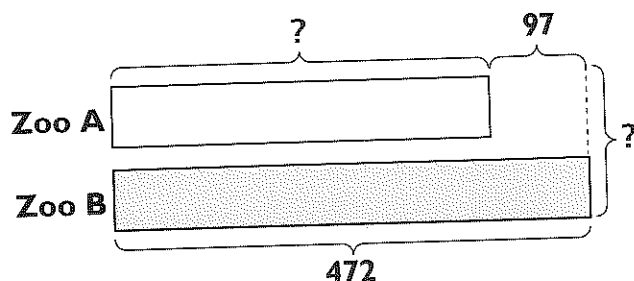
the thousands.

$$\begin{array}{r} \\ 3098 \\ - 2386 \\ \hline 5484 \end{array}$$

Two-step Word Problems

Models can help us solve addition and subtraction word problems more easily.

There are 472 animals at Zoo B.
There are 97 fewer animals at Zoo A than Zoo B.
How many animals are there altogether?



We draw a model to solve the word problem.



$$472 - 97 = 375$$

There are 375 animals in Zoo A.

Step 1:
Find the number of animals in Zoo A.



$$375 + 472 = 847$$

There are 847 animals altogether.

Step 2:
Find the total number of animals.



Exercise 1A : Sum and Difference Within 100

1. Write the numbers.

(a) $27 + 6 = \boxed{}$

$\swarrow \quad \searrow$
 3 3

(b) $32 + 9 = \boxed{}$

$\swarrow \quad \searrow$
 8 1

(c) $45 + 8 = \boxed{}$

$\swarrow \quad \searrow$
 43 2

(d) $56 + 7 = \boxed{}$

$\swarrow \quad \searrow$
 53 3

(e) $68 + 9 = \boxed{}$

$\swarrow \quad \searrow$
 67 1

draw a
del to solve
word
blem.



2. Fill in the boxes.

(a) $17 \xrightarrow{+ 20} \square \xrightarrow{+ 8} \square$

$17 + 28 = \square$

(b) $36 \xrightarrow{+ 10} \square \xrightarrow{+ 9} \square$

$36 + 19 = \square$

(c) $48 \xrightarrow{+ 40} \square \xrightarrow{+ 6} \square$

$48 + 46 = \square$

3. Fill in the boxes.

(a) What number is 5 more than 82?

(b) What number is 30 more than 47?

(c) What number is 26 more than 32?

Exercise 1B : Sum and Difference Within 100

1. Fill in the boxes.

(a) $32 - 8 = \boxed{}$

$\swarrow \quad \searrow$
 22 10

(b) $44 - 6 = \boxed{}$

$\swarrow \quad \searrow$
 34 10

(c) $58 - 9 = \boxed{}$

$\swarrow \quad \searrow$
 48 10

(d) $75 - 7 = \boxed{}$

$\swarrow \quad \searrow$
 65 10

(e) $82 - 5 = \boxed{}$

$\swarrow \quad \searrow$
 72 10

2. Fill in the boxes.

(a) $42 \xrightarrow{-30} \square \xrightarrow{-6} \square$

$42 - 36 = \square$

(b) $57 \xrightarrow{-20} \square \xrightarrow{-9} \square$

$57 - 29 = \square$

(c) $91 \xrightarrow{-50} \square \xrightarrow{-7} \square$

$91 - 57 = \square$

3. Fill in the boxes.

(a) What number is 7 less than 21?

(b) What number is 20 less than 76?

(c) What number is 35 less than 50?

Exercise 1C : Sum and Difference Within 100

1. Write the missing numbers.

(a) $24 + \boxed{} = 98$

(b) $56 + \boxed{} = 70$

(c) $\boxed{} + 36 = 75$

(d) $\boxed{} + 43 = 61$

2. Write the missing numbers.

(a) $84 - \boxed{} = 37$

(b) $79 - \boxed{} = 18$

(c) $\boxed{} - 26 = 51$

(d) $\boxed{} - 42 = 49$

3. Write the missing numbers.

(a) $70 - \boxed{} = 55 + 10$

(b) $\boxed{} - 25 = 85 - 60$

(c) $20 + \boxed{} = 45 + 15$

(d) $\boxed{} + 35 = 60 - 15$

4. Draw models to solve the following.

Fill in the boxes.

(a) 57 is $\boxed{}$ less than 90.

(b) 15 more than 76 is $\boxed{}$.

(c) less than 81 is 25.

5. Fill in the boxes.

(a) 21 more than is 79.

(b) more than 31 is 87.

(c) 65 less than is 30.

6. Fill in the boxes with + or - in each .

(a) $28 \bigcirc 17 = 11$

(b) $32 \bigcirc 16 = 48$

(c) $90 \bigcirc 47 = 43$

(d) $72 \bigcirc 16 = 56$

7. Find each sum or difference. Then write $>$, $<$ or $=$ in each \bigcirc .

(a) $10 + 6 \bigcirc 16 - 5$

(b) $27 + 20 \bigcirc 52 - 10$

(c) $63 - 10 \bigcirc 83 - 20$

(d) $88 + 5 \bigcirc 100 - 7$

(e) $36 + 37 \bigcirc 80 - 15$

(f) $59 - 12 \bigcirc 68 - 21$

Exercise 2A : Sum and Difference Within 1000

1. Find the value of each of the following.

$$\begin{array}{r} \text{(a)} \quad 123 \\ + 415 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 595 \\ + 108 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 388 \\ + 142 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 890 \\ - 164 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 942 \\ - 865 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 704 \\ - 237 \\ \hline \end{array}$$

2. Fill in the boxes.

$$\text{(a)} \quad 563 + 97 = \boxed{}$$

$$\text{(b)} \quad 696 + 98 = \boxed{}$$

$$\text{(c)} \quad 745 - 96 = \boxed{}$$

$$\text{(d)} \quad 801 - 99 = \boxed{}$$

3. Estimate the value of each of the following by rounding each number to the nearest ten.

(a) $62 + 76$

$$\boxed{} + \boxed{} = \boxed{}$$

(b) $58 + 93$

$$\boxed{} + \boxed{} = \boxed{}$$

(c) $672 + 197$

$$\boxed{} + \boxed{} = \boxed{}$$

(d) $91 - 78$

$$\boxed{} - \boxed{} = \boxed{}$$

(e) $87 - 25$

$$\boxed{} - \boxed{} = \boxed{}$$

(f) $261 - 139$

$$\boxed{} - \boxed{} = \boxed{}$$

ing each

4. Estimate the value of each of the following by rounding each number to the nearest hundred.

(a) $563 + 312$

$$\boxed{} + \boxed{} = \boxed{}$$

(b) $695 + 214$

$$\boxed{} + \boxed{} = \boxed{}$$

(c) $716 + 182$

$$\boxed{} + \boxed{} = \boxed{}$$

(d) $992 - 567$

$$\boxed{} - \boxed{} = \boxed{}$$

(e) $847 - 699$

$$\boxed{} - \boxed{} = \boxed{}$$

(f) $768 - 409$

$$\boxed{} - \boxed{} = \boxed{}$$

5. Write the missing numbers.

(a) $\square + 473 = 500$

(b) $\square + 517 = 600$

(c) $682 + \square = 700$

(d) $739 + \square = 800$

(e) $\square + 872 = 900$

6. Write the missing numbers.

(a) $500 - \square = 312$

(b) $\square - 192 = 408$

(c) $800 - \square = 365$

(d) $\square - 254 = 176$

(e) $530 - \square = 180$

Exercise 2B : Sum and Difference Within 1000

1. Do these. Show your work clearly.

(a) Tom has 153 stamps. Ryan gives him 98 stamps. How many stamps does Tom have now?

(b) Alison has 257 beads. Sally has 319 beads. How many more beads does Sally have than Alison?

(c) After selling 575 eggs, Mr. Lim had 283 eggs left.
How many eggs did he have at first?

(d) A shopkeeper had 976 exercise books.
765 of them were sold.
How many exercise books were left?

Exercise 3 : Adding Ones, Tens, Hundreds and Thousands

1. Add.

(a) $3072 + 8 = \underline{\hspace{2cm}}$

(b) $1947 + 60 = \underline{\hspace{2cm}}$

(c) $3615 + 90 = \underline{\hspace{2cm}}$

(d) $4625 + 400 = \underline{\hspace{2cm}}$

(e) $7138 + 900 = \underline{\hspace{2cm}}$

(f) $8800 + 200 = \underline{\hspace{2cm}}$

2. Write the missing numbers.

(a) $\boxed{\hspace{1cm}} - 352 = 1000$

(b) $\boxed{\hspace{1cm}} - 1352 = 2000$

(c) $\boxed{\hspace{1cm}} - 527 = 1000$

(d) $\boxed{\hspace{1cm}} - 2527 = 3000$

(e) $\boxed{\hspace{1cm}} - 4816 = 5000$

3. Add.

$$\begin{array}{r} \text{(a)} \quad 1326 \\ + \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 2435 \\ + \quad 84 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 1208 \\ + \quad 672 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 1450 \\ + \quad 364 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 2147 \\ + \quad 376 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 2803 \\ + \quad 516 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 4334 \\ + \quad 807 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 4521 \\ + \quad 279 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 6578 \\ + \quad 435 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(j)} \quad 2493 \\ + \quad 5839 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(k)} \quad 2678 \\ + \quad 3888 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(l)} \quad 3204 \\ + \quad 1529 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(m)} \quad 5874 \\ + \quad 4126 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(n)} \quad 6524 \\ + \quad 2778 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(o)} \quad 7305 \\ + \quad 1997 \\ \hline \end{array}$$

Exercise 4 : Subtracting Ones, Tens, Hundreds and Thousands

$$\begin{array}{r} 1208 \\ + 672 \\ \hline \end{array}$$

$$\begin{array}{r} 2803 \\ + 516 \\ \hline \end{array}$$

$$\begin{array}{r} 6578 \\ + 435 \\ \hline \end{array}$$

1. Subtract.

(a) $1910 - 8 =$ _____

(b) $2700 - 20 =$ _____

(c) $4600 - 30 =$ _____

(d) $5000 - 600 =$ _____

(e) $8000 - 700 =$ _____

(f) $9000 - 400 =$ _____

2. Write the missing numbers.

(a) $\boxed{} + 3093 = 4000$

(b) $4361 + \boxed{} = 5000$

(c) $\boxed{} + 5282 = 6000$

(d) $6605 + \boxed{} = 7000$

(e) $\boxed{} + 7721 = 8000$

$$\begin{array}{r} 3204 \\ + 1529 \\ \hline \end{array}$$

$$\begin{array}{r} 7305 \\ + 1997 \\ \hline \end{array}$$

3. Subtract.

$$\begin{array}{r} \text{(a)} \quad 1736 \\ - \quad 372 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 1465 \\ - \quad 648 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 2453 \\ - \quad 545 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 2582 \\ - \quad 458 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 3064 \\ - \quad 743 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 3257 \\ - \quad 579 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 3214 \\ - \quad 1268 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 3421 \\ - \quad 1865 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 5301 \\ - \quad 4498 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(j)} \quad 6214 \\ - \quad 3217 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(k)} \quad 6284 \\ - \quad 1287 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(l)} \quad 7045 \\ - \quad 6876 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(m)} \quad 7200 \\ - \quad 3254 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(n)} \quad 8301 \\ - \quad 8297 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(o)} \quad 9002 \\ - \quad 2768 \\ \hline \end{array}$$

Exercise 5 : Two-step Word Problems

$$\begin{array}{r} 2453 \\ - 545 \\ \hline \end{array}$$

$$\begin{array}{r} 3257 \\ - 579 \\ \hline \end{array}$$

$$\begin{array}{r} 5301 \\ - 4498 \\ \hline \end{array}$$

$$\begin{array}{r} 7045 \\ - 6876 \\ \hline \end{array}$$

$$\begin{array}{r} 9002 \\ - 2768 \\ \hline \end{array}$$

1. Do these. Show all your work clearly.

- (a) A television costs \$1045.
It is \$968 cheaper than a refrigerator.
What is the total cost of the refrigerator and the television?

- (b) There are 2045 students in a school.
1013 of them are girls.
How many more boys than girls are there in the school?

- (c) A mailman delivered 1352 letters on Monday. He delivered 76 more letters on Tuesday than on Monday and 1296 letters on Wednesday. How many letters did he deliver altogether?

- (d) Mrs. Chen had \$5039. She spent \$1543 on a set of furniture and \$2698 on a piano. How much money did she have left?

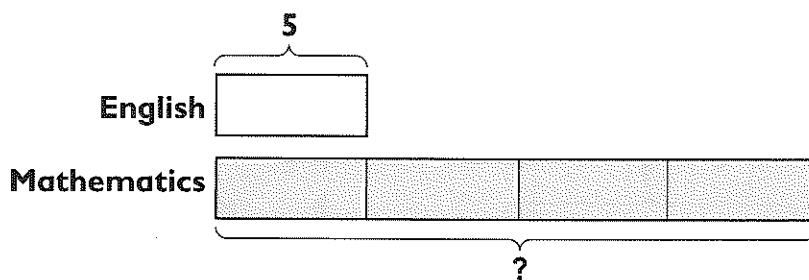
Unit 3 : Multiplication and Division

Friendly Notes

Word Problems

Models can also help us solve multiplication and division word problems.

1. There are 5 English books.
There are 4 times as many Mathematics books as English books.
How many Mathematics books are there?



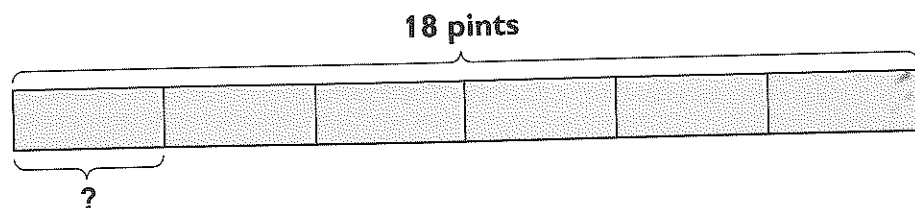
$$5 \times 4 = 20$$

There are 20 Mathematics books.

Multiply 5 by 4.



2. Mrs. Simpson bought 18 pints of milk.
She gave the milk equally to 6 children.
How many pints of milk did each child get?



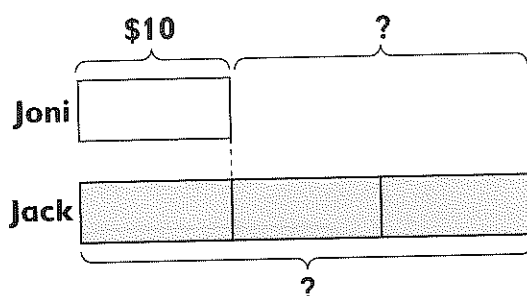
$$18 \div 6 = 3$$

Each child got 3 pints of milk.

6 units = 18 pints
1 unit = $18 \div 6$



3. Joni has \$10.
Jack has 3 times as much as Joni.
How much less money does Joni have than Jack?



$$10 \times 3 = 30$$

Jack has \$30.

$$30 - 10 = 20$$

Joni has \$20 less than Jack.

Multiplying Ones, Tens, Hundreds and Thousands

To find the **product** of two numbers, we multiply them.

To multiply a 2-digit number by a 1-digit number,

Step 1: Multiply the ones by the 1-digit number.

Step 2: Multiply the tens by the 1-digit number.

1. Find the product of 35 and 4.

Multiply the ones by 4.

$$\begin{array}{r} 35 \\ \times 4 \\ \hline 0 \end{array}$$

Multiply the tens by 4.

$$\begin{array}{r} 35 \\ \times 4 \\ \hline 140 \end{array}$$

$$\begin{array}{|c|c|} \hline 3 & 0 \\ \hline 5 & \\ \hline \end{array} \times 4$$

$$30 \times 4 = 120$$

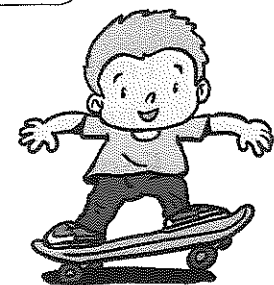
$$5 \times 4 = 20$$

$$35 \times 4 = 120 + 20$$

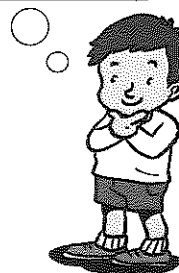
$$35 \times 4 = 140$$

The **product** of 35 and 4 is 140.

oints
6



ck?



To multiply a 3-digit number by a 1-digit number,
 Step 1: Multiply the ones by the 1-digit number.
 Step 2: Multiply the tens by the 1-digit number.
 Step 3: Multiply the hundreds by the 1-digit number.

2. Multiply 248 by 2.

Multiply the ones by 2.

$$\begin{array}{r} 248 \\ \times \quad 2 \\ \hline 6 \end{array}$$

Multiply the tens by 2.

$$\begin{array}{r} 248 \\ \times \quad 2 \\ \hline 96 \end{array}$$

Multiply the hundreds by 2.

$$\begin{array}{r} 248 \\ \times \quad 2 \\ \hline 496 \end{array}$$

$$248 \times 2 = 496$$

$$\begin{array}{r} 200 \\ 40 \\ 8 \end{array} \times 2$$

$$\begin{array}{l} 200 \times 2 = 400 \\ 40 \times 2 = 80 \\ 8 \times 2 = 16 \\ 248 \times 2 \\ = 400 + 80 + 16 \end{array}$$



To multiply a 4-digit number by a 1-digit number,
 Step 1: Multiply the ones by the 1-digit number.
 Step 2: Multiply the tens by the 1-digit number.
 Step 3: Multiply the hundreds by the 1-digit number.
 Step 4: Multiply the thousands by the 1-digit number.

3. Multiply 2167 by 4.

Multiply the ones by 4.

$$\begin{array}{r} 2167 \\ \times \quad 4 \\ \hline 8 \end{array}$$

Multiply the tens by 4.

$$\begin{array}{r} 2167 \\ \times \quad 4 \\ \hline 68 \end{array}$$

Multiply the hundreds by 4.

$$\begin{array}{r} 2167 \\ \times \quad 4 \\ \hline 668 \end{array}$$

Multiply the thousands by 4.

$$\begin{array}{r} 2167 \\ \times \quad 4 \\ \hline 8668 \end{array}$$

$$2167 \times 4 = 8668$$

$$\begin{array}{r} 200 \\ 80 \\ 16 \\ \hline \end{array} \times 2$$

$$\begin{array}{l} 2 = 400 \\ 2 = 80 \\ 2 = 16 \\ 2 \\ + 80 + 16 \end{array}$$



$$\begin{array}{r} 2000 \\ 1000 \\ 600 \\ 70 \\ \hline \end{array} \times 4$$



We can check if our answer is reasonable by estimating the product of the numbers.

4. Estimate the product of 513 and 3.

513 is 500 rounded to the nearest hundred.

$$500 \times 3 = 1500$$

The product of 513 and 3 is about 1500.



Quotient and Remainder

When a number cannot be divided by another number exactly, there is a **remainder**.

$$18 \div 7 = 2 \text{ remainder } 4$$

When 18 is divided by 7, the quotient is 2 and the remainder is 4.

$$\begin{array}{rcl} 2 \times 7 & = & 14 \\ 14 + 4 & = & 18 \end{array}$$



ating the



Numbers in which the ones digit is 0, 2, 4, 6 or 8 are **even numbers**. All even numbers can be divided by 2 exactly.

Numbers in which the ones digit is 1, 3, 5, 7 or 9 are **odd numbers**. All odd numbers cannot be divided by 2 exactly. There is a remainder of 1.

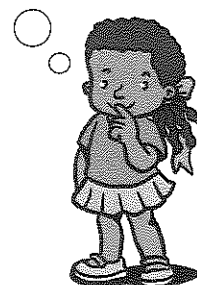
Divide 97 by 2.

$$\begin{array}{r} 4 \\ 2 \overline{) 97} \\ \underline{8} \\ 1 \end{array}$$



$$4 \times 2$$

$$9 \text{ tens} \div 2 = 4 \text{ tens with remainder 1 ten}$$



$$\begin{array}{r} 48 \\ 2 \overline{) 97} \\ \underline{8} \\ 17 \\ \underline{16} \\ 1 \end{array}$$



$$8 \times 2$$

$$17 \text{ ones} \div 2 = 8 \text{ ones with remainder 1 one}$$



umber

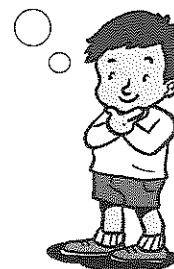
remainder

$$= 14$$

$$= 18$$

When 97 is divided by 2, the quotient is 48 and the remainder is 1.

$$\begin{aligned} 48 \times 2 &= 96 \\ 96 + 1 &= 97 \end{aligned}$$



Dividing Hundreds, Tens and Ones

To divide a 3-digit number by a 1-digit number,

Step 1: Divide the hundreds by the 1-digit number.

Step 2: Divide the tens by the 1-digit number.

Step 3: Divide the ones by the 1-digit number.

Find the value of $315 \div 2$.

Divide the
hundreds by 2.

$$\begin{array}{r} 1 \\ 2 \overline{) 315} \\ \underline{2} \\ 1 \end{array}$$

Divide the
tens by 2.

$$\begin{array}{r} 15 \\ 2 \overline{) 315} \\ \underline{2} \\ 11 \\ \underline{10} \\ 1 \end{array}$$

Divide the
ones by 2.

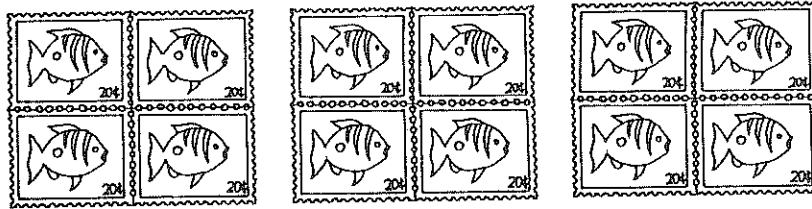
$$\begin{array}{r} 157 \\ 2 \overline{) 315} \\ \underline{2} \\ 11 \\ \underline{10} \\ 15 \\ \underline{14} \\ 1 \end{array}$$

$$315 \div 2 = 157 \text{ remainder } 1$$

When 315 is divided by 2, the quotient is 157 and the remainder is 1.

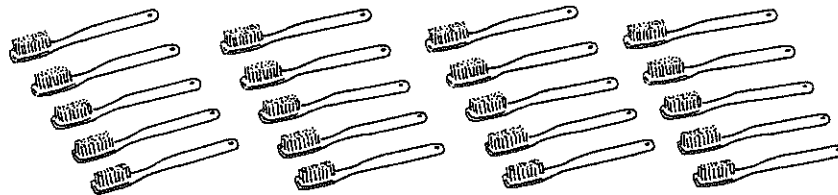
Exercise 1 : Looking Back

1. Write the numbers.



3 fours =

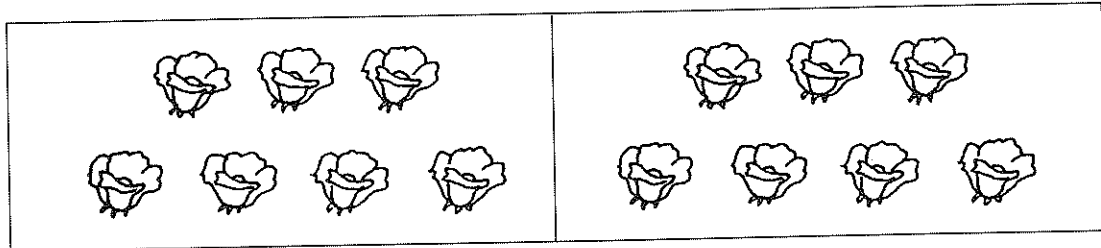
2. Write two multiplication sentences.



$$\square \times \square = \square$$

$$\square \times \square = \square$$

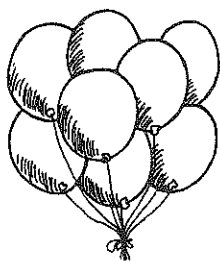
3. Complete the division sentences.



$$14 \div 2 = \square$$

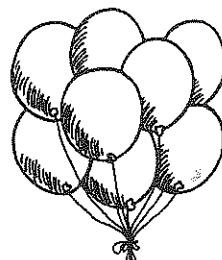
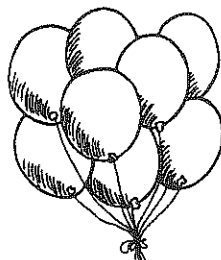
$$14 \div 7 = \square$$

4. Complete the number sentences.



$$8 \times 3 = \square$$

$$24 \div 3 = \square$$



$$3 \times 8 = \square$$

$$24 \div 8 = \square$$

5. Multiply.

(a) $5 \times 2 =$

(b) $6 \times 3 =$

(c) $4 \times 9 =$

(d) $10 \times 0 =$

6. Divide.

(a) $16 \div 2 =$

(b) $27 \div 3 =$

(c) $24 \div 4 =$

(d) $40 \div 5 =$

7. Complete the number sentences.

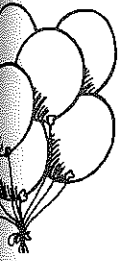
(a) $\square \times 2 = 18$

(b) $\square \times 3 = 21$

$$18 \div 2 = \square$$

$$21 \div 3 = \square$$

Exercise 2 : More Word Problems



$8 = \square$

$8 = \square$

1. Do these. Show all your work clearly.

- (a) Mary bought 5 boxes of cake.
Each box contained 9 pieces of cake.
How many pieces of cake did she buy?

- (b) 32 m of cloth was cut into 4 pieces of the same length.
How long was each piece of cloth?

- (c) There are 80 tables altogether in 8 equal rows.
How many tables are there in each row?

- (d) James has 36 balloons.
He has 4 times as many balloons as George.
How many balloons does George have?
- (e) The weight of a fish is 2 lb.
The weight of a piece of meat is 3 times as much.
What is the weight of the piece of meat?
- (f) Each tray can carry 8 cups.
Mary has 3 trays.
How many cups can the 3 trays carry?

Exercise 3 : Multiplying Ones, Tens, Hundreds and Thousands

1. Multiply.

(a)

$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ \times 3 \\ \hline \end{array}$
--	---

(b)

$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ \times 4 \\ \hline \end{array}$
--	---

(c)

$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 600 \\ \times 5 \\ \hline \end{array}$
--	--

(d)

$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 700 \\ \times 4 \\ \hline \end{array}$
--	--

2. Multiply.

(a)

$$\begin{array}{r} 30 \\ \times 4 \\ \hline \end{array}$$

(b)

$$\begin{array}{r} 20 \\ \times 5 \\ \hline \end{array}$$

(c)

$$\begin{array}{r} 600 \\ \times 2 \\ \hline \end{array}$$

(d)

$$\begin{array}{r} 500 \\ \times 2 \\ \hline \end{array}$$

(e)

$$\begin{array}{r} 73 \\ \times 3 \\ \hline \end{array}$$

(f)

$$\begin{array}{r} 23 \\ \times 2 \\ \hline \end{array}$$

(g)

$$\begin{array}{r} 71 \\ \times 5 \\ \hline \end{array}$$

(h)

$$\begin{array}{r} 61 \\ \times 4 \\ \hline \end{array}$$

3. Multiply.

$$\begin{array}{r} \text{(a)} \quad 136 \\ \times \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 219 \\ \times \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 348 \\ \times \quad 3 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 625 \\ \times \quad 4 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 795 \\ \times \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 957 \\ \times \quad 3 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 1212 \\ \times \quad 4 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 3131 \\ \times \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 2305 \\ \times \quad 4 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(j)} \quad 4746 \\ \times \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(k)} \quad 1286 \\ \times \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(l)} \quad 2390 \\ \times \quad 4 \\ \hline \end{array}$$

4. Multiply.

$$\text{(a)} \quad 63 \times 3 =$$

$$\text{(b)} \quad 64 \times 5 =$$

$$\text{(c)} \quad 72 \times 4 =$$

$$\text{(d)} \quad 89 \times 2 =$$

$$\text{(e)} \quad 207 \times 4 =$$

$$\text{(f)} \quad 389 \times 3 =$$

$$\text{(g)} \quad 423 \times 5 =$$

$$\text{(h)} \quad 850 \times 5 =$$

5. Do these. Show all your work clearly.

$$\begin{array}{r} 348 \\ \times 3 \\ \hline \end{array}$$

- (a) There are 346 pages in a book.
How many pages are there in 2 such books?

$$\begin{array}{r} 957 \\ \times 3 \\ \hline \end{array}$$

- (b) Container A can hold 125 pints of water
Container B can hold 5 times as much water.
How many pints of water can Container B hold?

$$\begin{array}{r} 2305 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2390 \\ \times 4 \\ \hline \end{array}$$

- (c) Adam has 63 stickers.
Sara has 4 times as many stickers as Adam.
How many more stickers does Sara have than Adam?

- (d) Mrs. Watts baked 2136 apple pies.
Mrs. Li baked twice as many apple pies as Mrs. Watts.
- (i) About how many apple pies did Mrs. Li bake?
 - (ii) Exactly how many apple pies did Mrs. Li bake?

- (e) Bobby has \$3125.
Jansen has 3 times as much money as Bobby.
- (i) About how much money does Jansen have?
 - (ii) Exactly how much money does Jansen have?

Exercise 4 : Quotient and Remainder

1. Circle the odd numbers.

6	25	37	130	281
403	512	1358	2649	3718

2. Circle the even numbers.

7	18	29	46	318
501	360	723	2915	4816

3. Find the quotient and remainder.

(a) $2 \overline{)68}$

(b) $3 \overline{)46}$

Quotient

Remainder

Quotient

Remainder

4. Do these. Show all your work clearly.

- (a) Rooney has 46 apples.
He puts them in bags of 4 each.
How many bags does he use?
How many apples are left over?
- (b) Each pen costs \$3.
Mr. Dewar has \$67.
How many pens can he buy?
How much money will he have left?

Exercise 5 : Dividing Hundreds, Tens and Ones

1. Divide.

(a) $80 \div 10 =$

(b) $120 \div 10 =$

(c) $378 \div 10 =$

(d) $503 \div 10 =$

2. Find the quotient and remainder.

(a) $4 \overline{) 926}$

(b) $3 \overline{) 641}$

Quotient

Remainder

Quotient

Remainder

(c) $5 \overline{) 609}$

(d) $2 \overline{) 857}$

Quotient

Remainder

Quotient

Remainder

3. Divide.

(a) $5 \overline{) 43}$	(b) $4 \overline{) 68}$	(c) $2 \overline{) 71}$	(d) $5 \overline{) 99}$
(e) $3 \overline{) 81}$	(f) $10 \overline{) 54}$	(g) $3 \overline{) 309}$	(h) $2 \overline{) 530}$
(i) $5 \overline{) 525}$	(j) $4 \overline{) 735}$	(k) $3 \overline{) 722}$	(l) $10 \overline{) 240}$

4. Do these. Show all your work clearly.

(d)

$$5 \overline{) 99}$$

- (a) A taxi can carry 4 passengers.
How many taxis are needed to carry 144 passengers?

(h)

$$2 \overline{) 530}$$

- (b) Pablo had 105 apples.
He put 5 apples in one bag.
How many bags did he use to put all the apples?

(l)

$$10 \overline{) 240}$$

- (c) Ali had 365 eggs.
He put 8 eggs in each basket.
How many baskets did he use?
How many eggs were left over?











- (d) 574 chairs were arranged in 5 rows in a hall.
How many chairs were there in each row?
How many chairs were left over?

Unit 4 : Multiplying and Dividing by 6, 7, 8 and 9

Friendly Notes

Multiplying and Dividing by 6

Remembering the multiplication table of 6 shown below helps us to multiply and divide by 6 easily.

$1 \times 6 = 6$ $6 \div 6 = 1$	
$2 \times 6 = 12$ $12 \div 6 = 2$	
$3 \times 6 = 18$ $18 \div 6 = 3$	
$4 \times 6 = 24$ $24 \div 6 = 4$	
$5 \times 6 = 30$ $30 \div 6 = 5$	
$6 \times 6 = 36$ $36 \div 6 = 6$	
$7 \times 6 = 42$ $42 \div 6 = 7$	
$8 \times 6 = 48$ $48 \div 6 = 8$	
$9 \times 6 = 54$ $54 \div 6 = 9$	
$10 \times 6 = 60$ $60 \div 6 = 10$	

1. Multiply 532 by 6.

	Multiply the ones by 6.	Multiply the tens by 6.	Multiply the hundreds by 6.
$\begin{array}{r} 532 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 5\overset{1}32 \\ \times 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 5\overset{1}32 \\ \times 6 \\ \hline 92 \end{array}$	$\begin{array}{r} 5\overset{1}32 \\ \times 6 \\ \hline 3192 \end{array}$

When 532 is multiplied by 6, the product is 3192.



We can use estimation
to check if the answer is
reasonable.

532 is 500 rounded to the nearest hundred.

$$500 \times 6 = 3000$$

3192 is close to 3000.

So, the answer is reasonable.

2. Divide 697 by 6.

Multiply the hundreds by 6.

$$\begin{array}{r} 532 \\ \times 6 \\ \hline 3192 \end{array}$$

	Divide the hundreds by 6.	Divide the tens by 6.	Divide the ones by 6.
$6 \overline{)697}$	$\begin{array}{r} 1 \\ 6 \overline{)697} \\ \underline{6} \\ 0 \end{array}$	$\begin{array}{r} 11 \\ 6 \overline{)697} \\ \underline{6} \\ 09 \\ \underline{6} \\ 3 \end{array}$	$\begin{array}{r} 116 \\ 6 \overline{)697} \\ \underline{6} \\ 09 \\ \underline{6} \\ 37 \\ \underline{36} \\ 1 \end{array}$

When 697 is divided by 6, the quotient is 116 and the remainder is 1.











3. Divide 8016 by 6.

	Divide the thousands by 6.	Divide the hundreds by 6.	Divide the tens by 6.	Divide the ones by 6.
$6 \overline{)8016}$	$\begin{array}{r} 1 \\ 6 \overline{)8016} \\ \underline{6} \\ 2 \end{array}$	$\begin{array}{r} 13 \\ 6 \overline{)8016} \\ \underline{6} \\ 20 \\ \underline{18} \\ 2 \end{array}$	$\begin{array}{r} 133 \\ 6 \overline{)8016} \\ \underline{6} \\ 20 \\ \underline{18} \\ 21 \\ \underline{18} \\ 3 \end{array}$	$\begin{array}{r} 1336 \\ 6 \overline{)8016} \\ \underline{6} \\ 20 \\ \underline{18} \\ 21 \\ \underline{18} \\ 36 \\ \underline{36} \\ 0 \end{array}$

When 8016 is divided by 6, the quotient is 1336 and the remainder is 0.

Multiplying and Dividing by 7

Remembering the multiplication table of 7 shown below helps us to multiply and divide by 7 easily.

$1 \times 7 = 7$ $7 \div 7 = 1$	
$2 \times 7 = 14$ $14 \div 7 = 2$	
$3 \times 7 = 21$ $21 \div 7 = 3$	
$4 \times 7 = 28$ $28 \div 7 = 4$	
$5 \times 7 = 35$ $35 \div 7 = 5$	
$6 \times 7 = 42$ $42 \div 7 = 6$	
$7 \times 7 = 49$ $49 \div 7 = 7$	
$8 \times 7 = 56$ $56 \div 7 = 8$	
$9 \times 7 = 63$ $63 \div 7 = 9$	
$10 \times 7 = 70$ $70 \div 7 = 10$	

$$10 \times 7 = 70$$

$$9 \times 7 = 70 - 7$$



$$10 \times 7 = 70$$

$$2 \times 7 = 14$$

$$8 \times 7 = 70 - 14$$

yn below helps

- $$28 \times 7 = 196$$

$$\begin{array}{r} 28 \\ \times 7 \\ \hline 196 \end{array}$$

28 is 30 rounded to the nearest ten.

$$30 \times 7 = 210$$

196 is close to 210.

A cartoon illustration of a young boy with dark, wavy hair and round glasses. He is wearing a short-sleeved polo shirt and shorts. He has a happy expression with a wide smile. Above his head is a thought bubble containing two small circles, suggesting he is thinking or happy.

- $$789 \div 7 = 112 \text{ R } 5$$











$$\begin{array}{r} 112 \\ 7 \overline{) 789} \\ \underline{7} \\ 08 \\ \underline{7} \\ 19 \\ \underline{14} \\ 5 \end{array}$$

There were 112 chairs in each row.
5 chairs were left.

$$\begin{aligned} &= 70 \\ &= 14 \\ &= 70 - 14 \end{aligned}$$

Multiplying and Dividing by 8

Remembering the multiplication table of 8 shown below helps us to multiply and divide by 8 easily.

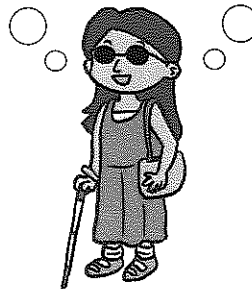
$1 \times 8 = 8$ $8 \div 8 = 1$	
$2 \times 8 = 16$ $16 \div 8 = 2$	
$3 \times 8 = 24$ $24 \div 8 = 3$	
$4 \times 8 = 32$ $32 \div 8 = 4$	
$5 \times 8 = 40$ $40 \div 8 = 5$	
$6 \times 8 = 48$ $48 \div 8 = 6$	
$7 \times 8 = 56$ $56 \div 8 = 7$	
$8 \times 8 = 64$ $64 \div 8 = 8$	
$9 \times 8 = 72$ $72 \div 8 = 9$	
$10 \times 8 = 80$ $80 \div 8 = 10$	

$$10 \times 8 = 80$$

$$9 \times 8 = 80 - 8$$

$$5 \times 8 = 40$$

$$6 \times 8 = 40 + 8$$

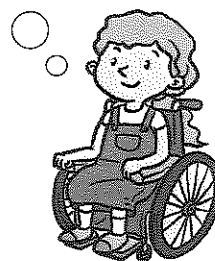


below helps

- $$32 \times 8 = 256$$

$$\begin{array}{r} ^1 32 \\ \times 8 \\ \hline 256 \end{array}$$

32 is 30 rounded to the nearest ten.
 $30 \times 8 = 240$
 240 is close to the answer.
 So, the answer is reasonable.



- (b) A fruit seller had 1605 oranges.
He packed them into 8 boxes equally.
How many oranges did he put into each box?
How many oranges were left over?











$$1605 \div 8 = 200 \text{ R } 5$$

$$\begin{array}{r} 200 \\ 8 \overline{) 1605} \\ \underline{16} \\ 005 \end{array}$$

He put 200 oranges into each box.
5 oranges were left over.

Multiplying and Dividing by 9

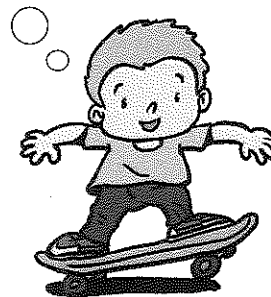
Remembering the multiplication table of 9 shown below helps us to multiply and divide by 9 easily.

$1 \times 9 = 9$ $9 \div 9 = 1$	
$2 \times 9 = 18$ $18 \div 9 = 2$	
$3 \times 9 = 27$ $27 \div 9 = 3$	
$4 \times 9 = 36$ $36 \div 9 = 4$	
$5 \times 9 = 45$ $45 \div 9 = 5$	
$6 \times 9 = 54$ $54 \div 9 = 6$	
$7 \times 9 = 63$ $63 \div 9 = 7$	
$8 \times 9 = 72$ $72 \div 9 = 8$	
$9 \times 9 = 81$ $81 \div 9 = 9$	
$10 \times 9 = 90$ $90 \div 9 = 10$	

If the sum of the digits in a number is 9, the number can be divided by 9 exactly.

$$243 \div 9 = 27$$

$$2 + 4 + 3 = 9$$



Solve these.

- (a) Ronnie has 2389 marbles.
He puts 9 marbles in each container.
How many containers does he need?
How many marbles are left over?

$$2389 \div 9 = 265 \text{ R } 4$$

He needs 265 boxes.
4 marbles are left over.

$$\begin{array}{r} 265 \\ 9 \overline{) 2389} \\ \underline{18} \\ 58 \\ \underline{54} \\ 49 \\ \underline{45} \\ 4 \end{array}$$

- (b) Mary sold 118 funfair tickets at \$9 each.
How much did she sell all the tickets for?

$$118 \times 9 = 1062$$

She sold all the tickets for \$1062.

$$\begin{array}{r} 118 \\ \times 9 \\ \hline 1062 \end{array}$$

118 is 100 rounded to the nearest hundred.
 $100 \times 9 = 900$
1062 is close to 900.
The answer is reasonable.



More Multiplication and Division

1. Find the value of $7 \times 10 \times 12$.

$$7 \times 10 \times 12 = 7 \times 12 \times 10$$

$$84 \times 10 = 840$$

$$7 \times 10 \times 12 = 840$$

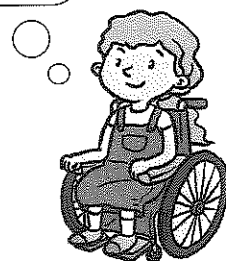
Multiply 7 by 12 first.



2. Find the value of $3000 \div 6$.

$$3000 \div 6 = 500$$

$$\begin{aligned} 30 \div 6 &= 5 \\ 300 \div 6 &= 50 \\ 3000 \div 6 &= 500 \end{aligned}$$

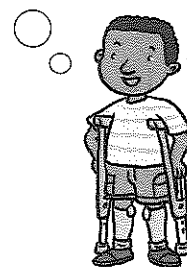


3. Estimate the value of $2389 \div 5$.

$$2500 \div 5 = 500$$

The value of $2389 \div 5$
is about 500.

$$\begin{aligned} 2398 \div 5 \\ 4 \times 5 &= 20 \\ 5 \times 5 &= 25 \\ 23 \text{ is closer to } 25 \text{ than } 20. \end{aligned}$$



Exercise 1 : Multiplying and Dividing by 6

1. Match.

$$3 \times 6$$

$$7 \times 6$$

$$10 \times 6$$

$$1 \times 6$$

6
18
24
36
42
48
54
60

$$6 \times 8$$

$$6 \times 9$$

$$6 \times 4$$

$$6 \times 6$$

2. Match.

$$60 \div 6$$

$$12 \div 6$$

$$54 \div 6$$

$$30 \div 6$$

1
2
3
5
6
8
9
10

$$36 \div 6$$

$$48 \div 6$$

$$6 \div 6$$

$$18 \div 6$$

by 12 first.



5 than 20.



3. Multiply.

$$\begin{array}{r} \text{(a)} \quad 21 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 34 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 45 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 258 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 370 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 432 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 505 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 600 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 713 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(j)} \quad 770 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(k)} \quad 906 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(l)} \quad 954 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 45 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 432 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 713 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 954 \\ \times 6 \\ \hline \end{array}$$

4. Divide.

(a) $6 \overline{) 49}$	(b) $6 \overline{) 68}$	(c) $6 \overline{) 72}$
(d) $6 \overline{) 78}$	(e) $6 \overline{) 84}$	(f) $6 \overline{) 96}$
(g) $6 \overline{) 258}$	(h) $6 \overline{) 300}$	(i) $6 \overline{) 390}$
(j) $6 \overline{) 500}$	(k) $6 \overline{) 552}$	(l) $6 \overline{) 537}$

5. Do these. Show all your work clearly.

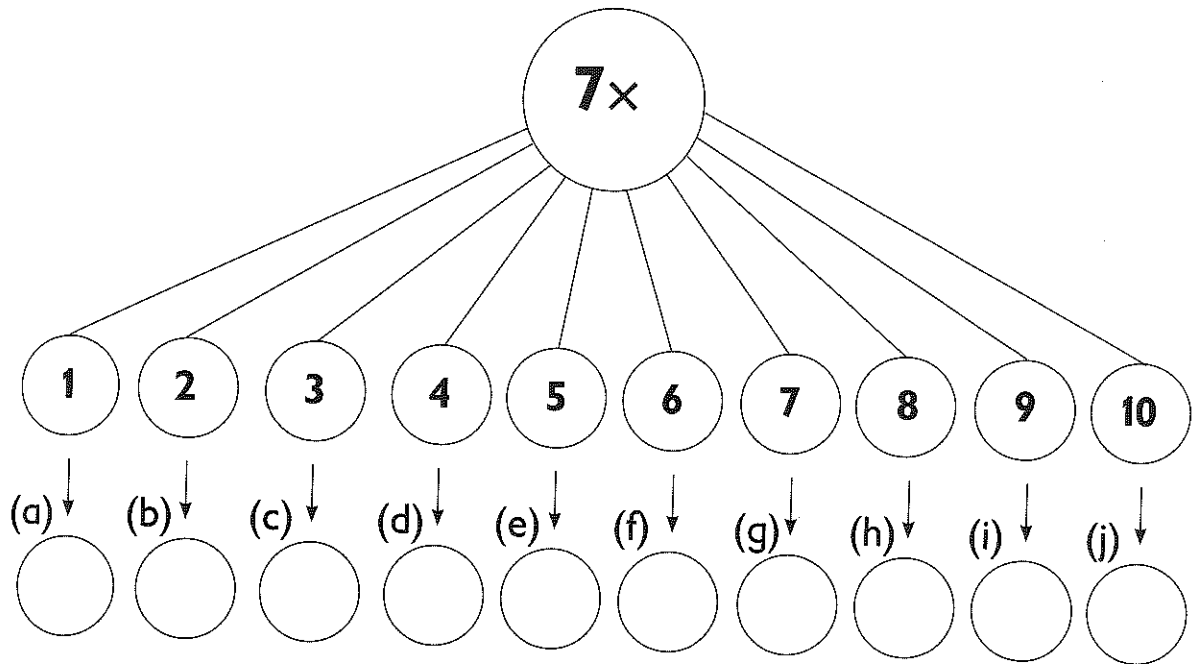
- (a) 274 cupcakes were shared equally among 6 classes.
How many cupcakes did each class get?
How many cupcakes were left over?

- (b) Sean earned \$732 in one month.
How much money did he earn in half a year?

- (c) Lily saved \$180 in half a year.
If she saved the same amount each month, how much
did she save in 5 months?

Exercise 2 : Multiplying and Dividing by 7

1. Multiply.



2. Match.

$35 \div 7$ $7 \div 7$ $56 \div 7$ $70 \div 7$ $49 \div 7$

1 2 3 4 5 6 7 8 9 10

$28 \div 7$ $14 \div 7$ $21 \div 7$ $63 \div 7$ $42 \div 7$

3. Multiply.

$$\begin{array}{r} \text{(a)} \quad 20 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 67 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 79 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 94 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 203 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 356 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 500 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 614 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 849 \\ \times \quad 7 \\ \hline \end{array}$$

4. Divide.

<p>(a)</p> $7 \overline{) 53}$	<p>(b)</p> $7 \overline{) 64}$	<p>(c)</p> $7 \overline{) 72}$	<p>(d)</p> $7 \overline{) 77}$
--------------------------------	--------------------------------	--------------------------------	--------------------------------

$$\begin{array}{r} 79 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 356 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 849 \\ \times 7 \\ \hline \end{array}$$

(e) $7 \overline{) 252}$	(f) $7 \overline{) 280}$	(g) $7 \overline{) 413}$	(h) $7 \overline{) 705}$
(i) $7 \overline{) 728}$	(j) $7 \overline{) 847}$	(k) $7 \overline{) 875}$	(l) $7 \overline{) 960}$

5. Do these. Show all your work clearly.

- (a) There are 105 pages in a book.
Aminah read 7 pages in one day.
How many days did she take to finish reading
the book?

(d)

$$7 \overline{) 77}$$

- (b) There are 89 marbles in a bag.
There are 7 times as many marbles in a box.
How many marbles are there in the box?

- (c) Mrs. Kim bought 7 toys.
Each toy cost \$68.
She had \$100 left after paying for the toys.
How much did she have at first?

Exercise 3 : Multiplying and Dividing by 8

1. Match.

3×8

16

$40 \div 8$

72

9×8

5

$32 \div 8$

6

6×8

24

$48 \div 8$

48

4

5×8

$64 \div 8$

2

7×8

40

$16 \div 8$

9

8

2×8

56

$72 \div 8$

2. Multiply.

$$\begin{array}{r} \text{(a)} \quad 13 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 24 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 35 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 42 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 68 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 79 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 104 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 216 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 358 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(j)} \quad 370 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(k)} \quad 421 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(l)} \quad 609 \\ \times \quad 8 \\ \hline \end{array}$$

3. Divide.

(c)
$$\begin{array}{r} 35 \\ \times 8 \\ \hline \end{array}$$

(f)
$$\begin{array}{r} 79 \\ \times 8 \\ \hline \end{array}$$

(j)
$$\begin{array}{r} 358 \\ \times 8 \\ \hline \end{array}$$

(l)
$$\begin{array}{r} 609 \\ \times 8 \\ \hline \end{array}$$

(a) $8 \overline{) 37}$	(b) $8 \overline{) 64}$	(c) $8 \overline{) 75}$
(d) $8 \overline{) 88}$	(e) $8 \overline{) 94}$	(f) $8 \overline{) 98}$
(g) $8 \overline{) 106}$	(h) $8 \overline{) 200}$	(i) $8 \overline{) 376}$
(j) $8 \overline{) 508}$	(k) $8 \overline{) 670}$	(l) $8 \overline{) 752}$

4. Do these. Show all your work clearly.

- (a) There are 12 bottles of ink in one box.
How many bottles of ink are there in 8 boxes?
- (b) There are 28 stamps on one page of an album.
How many stamps are there on 8 pages?
- (c) Matthew bought 6 bags of beads.
Each bag contained 100 beads.
He repacked them into packages of 8 each.
How many packages did he get?

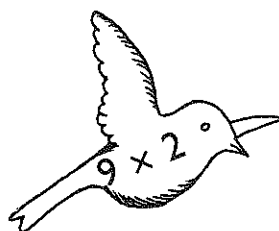
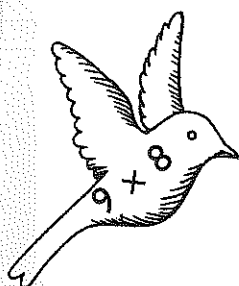
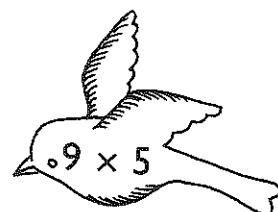
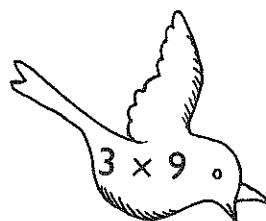
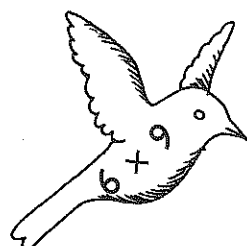
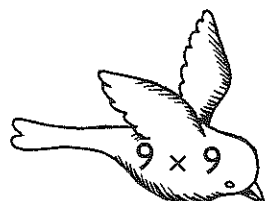
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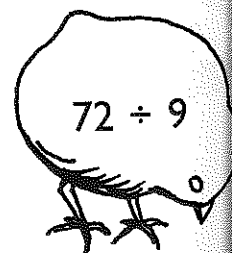
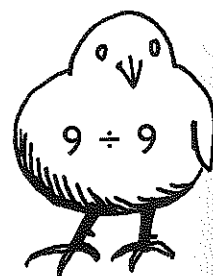
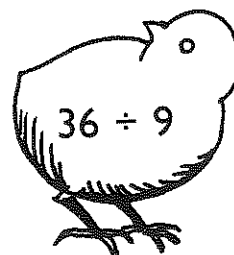
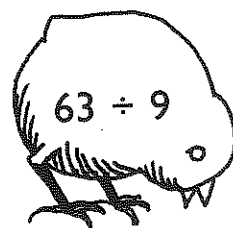
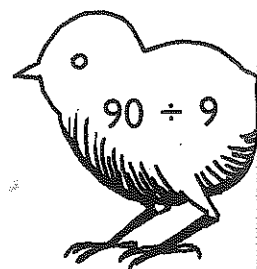
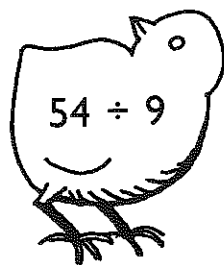
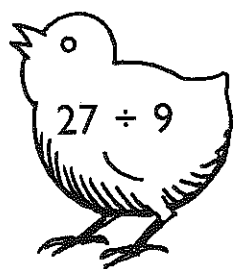
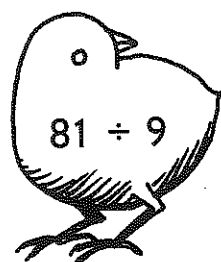
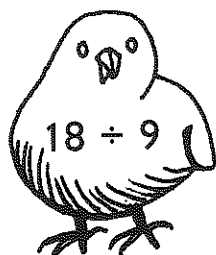
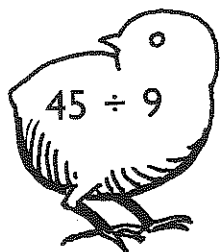
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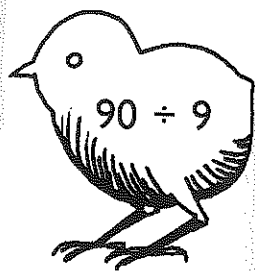
Exercise 4 : Multiplying and Dividing by 9

1. Match.



2. Match.



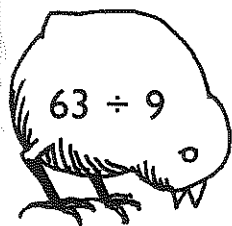


3. Multiply.

$$\begin{array}{r} \text{(a)} \quad 55 \\ \times \quad 9 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 60 \\ \times \quad 9 \\ \hline \end{array}$$

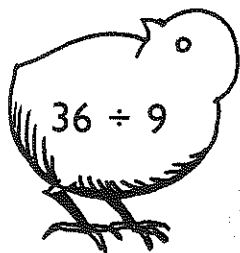
$$\begin{array}{r} \text{(c)} \quad 72 \\ \times \quad 9 \\ \hline \end{array}$$



$$\begin{array}{r} \text{(d)} \quad 570 \\ \times \quad 9 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 736 \\ \times \quad 9 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 827 \\ \times \quad 9 \\ \hline \end{array}$$

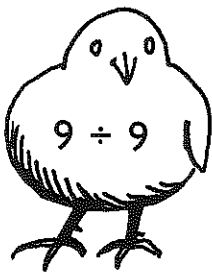


4. Divide.

$$\begin{array}{r} \text{(a)} \\ 9 \overline{) 76} \end{array}$$

$$\begin{array}{r} \text{(b)} \\ 9 \overline{) 83} \end{array}$$

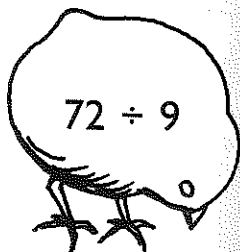
$$\begin{array}{r} \text{(c)} \\ 9 \overline{) 90} \end{array}$$



$$\begin{array}{r} \text{(d)} \\ 9 \overline{) 550} \end{array}$$

$$\begin{array}{r} \text{(e)} \\ 9 \overline{) 702} \end{array}$$

$$\begin{array}{r} \text{(f)} \\ 9 \overline{) 828} \end{array}$$



5. Do these. Show all your work clearly.

(a) Mark worked for 9 days.
He was paid \$495 altogether.
How much was he paid each day?

(b) Miss Meyer saves \$105 per month.
How much does she save in 9 months?

(c) Melissa had 315 stamps.
She gave 45 stamps away and kept the rest in
an album.
If one page of the album can contain 9 stamps, how
many pages would be needed to contain the rest of
the stamps?

Exercise 5 : More Multiplication and Division

1. Fill in the boxes.

(a) $50 \times 8 \times 4 = \boxed{}$

(b) $25 \times 7 \times 10 = \boxed{}$

2. Find the missing numbers.

(a) $4 \times 6 \times 8 = \boxed{} \times 4 \times 6$

(b) $5 \times 3 \times 2 = 2 \times 5 \times \boxed{}$

(c) $8 \times 5 \times 6 = 6 \times \boxed{}$

(d) $6 \times 9 \times 5 = \boxed{} \times 3$

(e) $20 \times 7 \times 5 = 100 \times \boxed{}$

3. Fill in the boxes.

(a) $9 \div 3 = \boxed{}$

$90 \div 3 = \boxed{}$

$900 \div 3 = \boxed{}$

$9000 \div 3 = \boxed{}$

(b) $8 \div 4 =$

$80 \div 4 =$

$800 \div 4 =$

$8000 \div 4 =$

4. Fill in the boxes.

(a) Estimate the value of $472 \div 5$.

$\div 5 =$

The value of $472 \div 5$ is about .

(b) Estimate the value of $1637 \div 6$.

$\div 6 =$

The value of $1637 \div 6$ is about .

(c) Estimate the value of $2580 \div 4$.

$\div 4 =$

The value of $2580 \div 4$ is about .

$2580 \div 4 =$

The actual quotient is to the estimate.

Unit 5 : Data Analysis

Friendly Notes

Presenting Data

We can present data in the form of a table, bar graph, tally chart or line plot.

Mrs. Li took a survey of the favorite fruits of the students in her class.

She presented the results of her survey in a table as shown below.

Favorite fruit	Number of students
Banana	5
Pear	8
Apple	10
Orange	14
Grapefruit	3

From the table,

(a) the greatest number of students like oranges.

(b) the least number of students like grapefruits.

(c) $5 + 8 + 10 + 14 + 3 = 40$

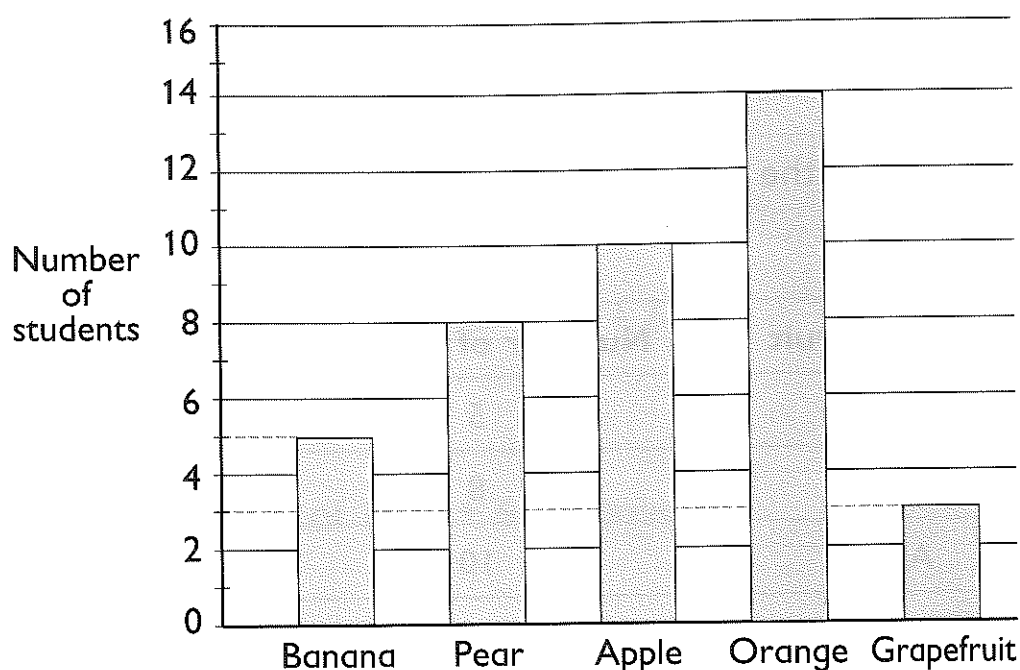
There are 40 students in the class.

mate.

The results of the survey can also be presented in a bar graph as shown below.



Favorite fruit	Number of students
Banana	5
Pear	8
Apple	10
Orange	14
Grapefruit	3



in a bar graph

A survey was carried out to find the number of pets in each family. The data collected is shown below.

0	2	2	1	1	0	3
5	4	2	2	1	3	3
0	0	0	1	1	1	1
2	1	1	4	2	0	0
2	2	1	3	1	0	0
0	2	1	1	3	2	2

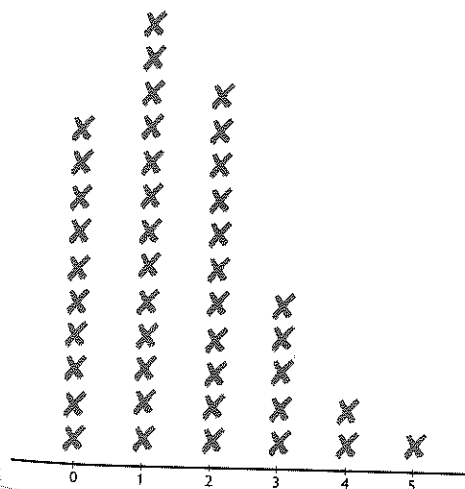
The results of the survey can be presented in a tally chart as shown below.

Number of pets in the family	Number of families	
0	/// ///	10
1	/// /// ///	13
2	/// /// /	11
3	///	5
4	//	2
5	/	1

42 families were surveyed altogether.



The results of the survey can also be presented in a line plot as shown below.



The number of pets in most families is 1.



Probability

Probability is a measure of the chances of an event happening.
An event is certain if it always happens.
An event is impossible if it never happens.
A likely event has a good chance of happening.
An unlikely event does not have a good chance of happening.

Certain event:

The sun rises in the east and sets in the west.

Impossible event:

An ostrich egg hatches into a baby crocodile.

Likely event:

Children's day falls on a Sunday.

Unlikely event:

Students mark test papers done by teachers.

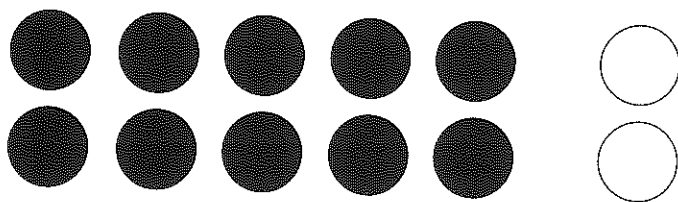
What other
unlikely events
can you think of?



happening.

happening.

1. There are 10 black balls and 2 white balls in a bag.
John picks a ball from the bag without looking.

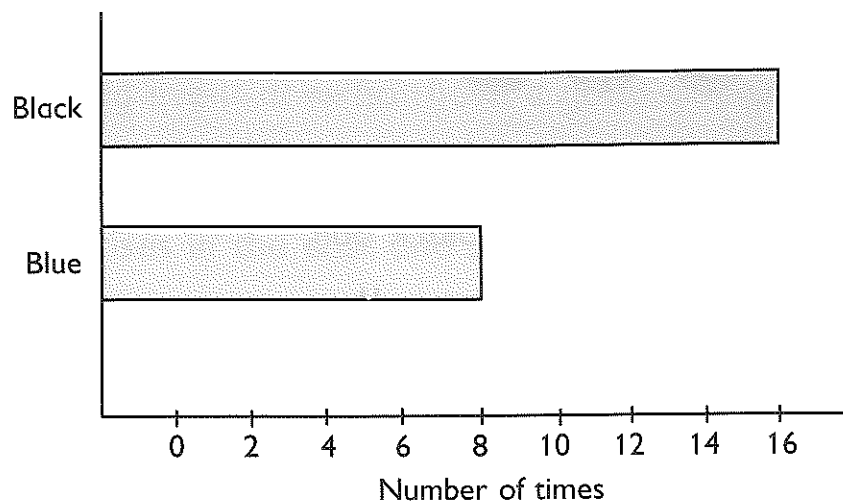


- (a) There are more black balls than white balls.
John is likely to pick a black ball.
- (b) There are no green balls, so it is impossible
to pick a green ball.
2. Alice rolled a regular six-sided die.
She recorded her results in a tally chart as shown below.

1	2	3	4	5	6
/// /	///	///	///	////	///

- (a) $6 + 5 + 5 + 5 + 4 + 5 = 30$
Alice rolled the die 30 times.
- (b) She got the number 4 five times.
- (c) She got the number 1 the most often.
- (d) Each time Alice rolls the die, she is likely to get any
one of the six numbers as she got each number almost
the same number of times.

3. The bar graph shows the number of times Jane picked a blue pen from a box without looking. She replaced the pen each time. She presented the results in a bar graph as shown below.



From the graph,

- (a) Jane picked a black pen more often.
- (b) She picked a black pen 8 times more than a blue pen.
- (c) Her chances of choosing a black pen were higher, as there were more black pens in the box.

Exercise 1 : Presenting Data

1. 56 boys and 48 girls went on a field trip. 22 of the boys and 36 of the girls wore caps.

(a) Complete the following table.

	Number of boys	Number of girls	Total number of boys and girls
Wearing caps	22	36	58
Not wearing caps			
Total number of boys and girls			

(b) How many more boys than girls did not wear caps?

(c) How many more girls than boys wore caps?

2. (a) Make a table to show the following data.

Raju's score Science: 85 English: 79 Mathematics: 80

Steve's score English: 68 Mathematics: 72 Science: 80
--

Maggie's score Mathematics: 75 Science: 87 English: 70

Using the table, answer the following questions.

- (b) Who obtained the highest score in Mathematics?

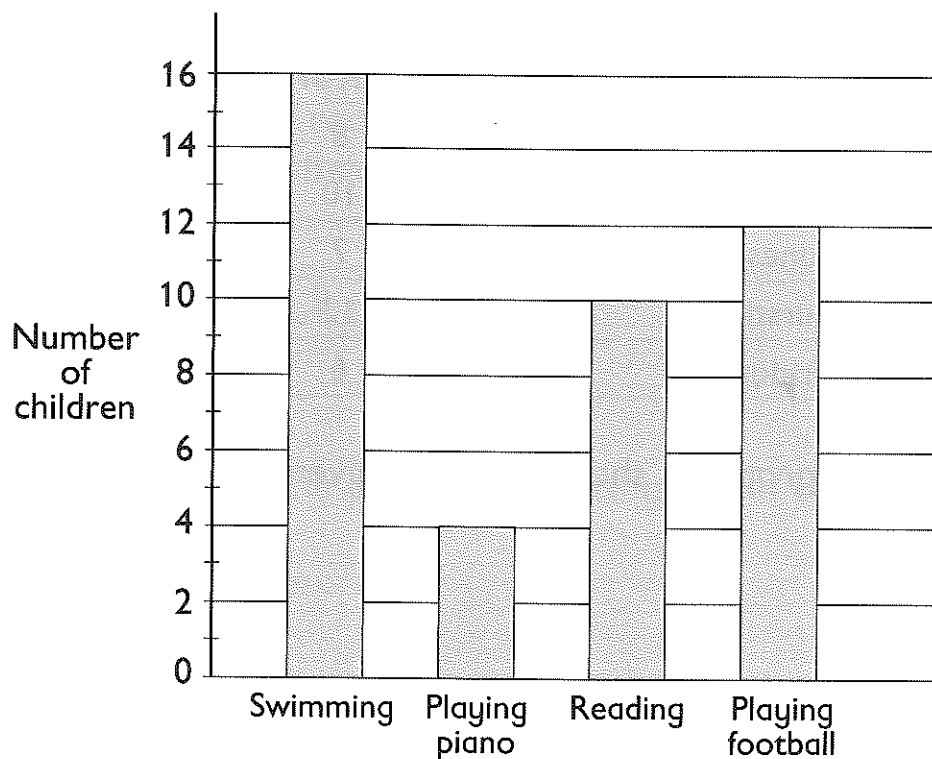
- (c) Who obtained the least score in English?

- (d) Who obtained the highest score in Science?

- (e) How many more points did Raju score than Steve in Science?

- (f) How many more points did Raju score than Maggie in Mathematics?

3. The bar graph shows the favorite hobby of the children in a class.



- (a) Which is the most favorite hobby of the children?

- (b) Which is the least favorite hobby of the children?

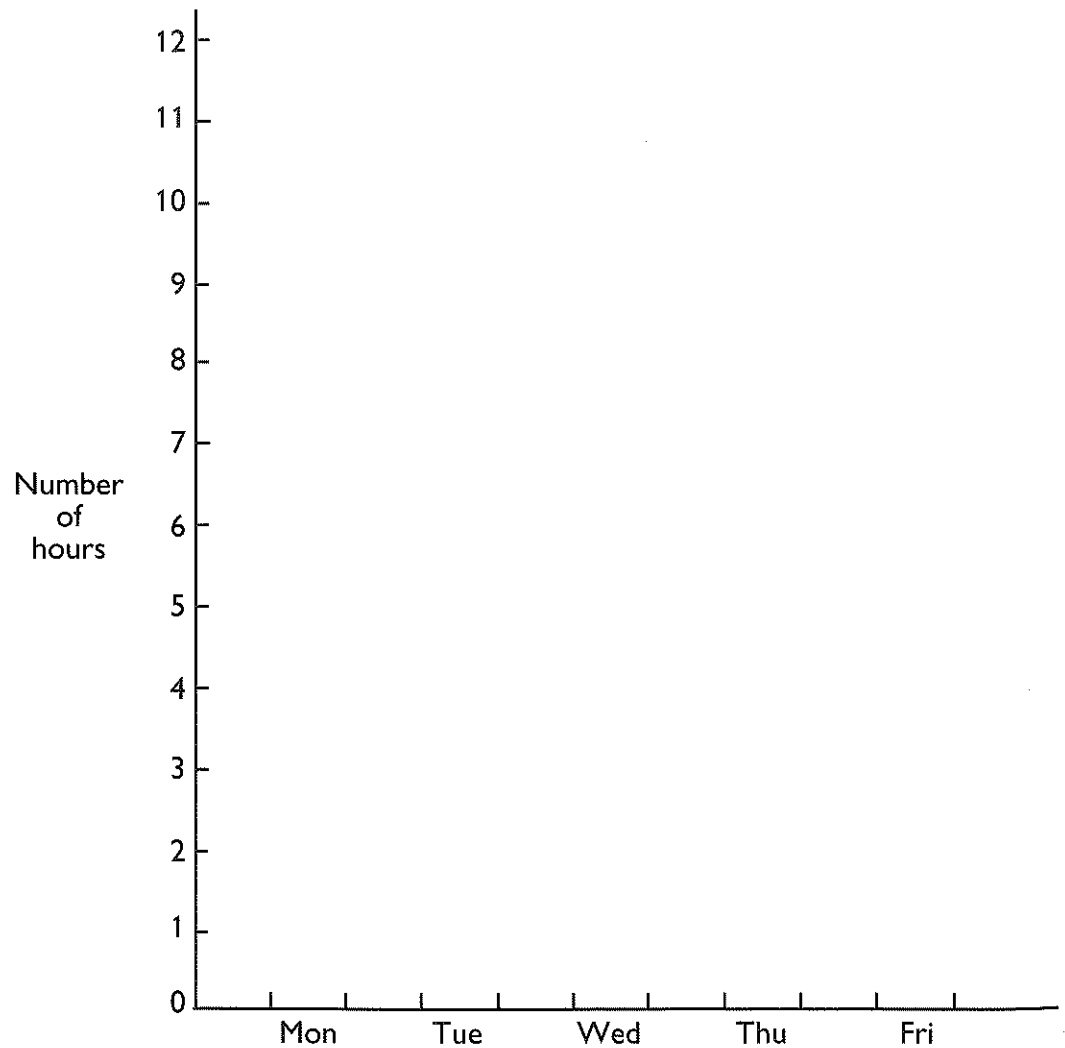
- (c) How many more children prefer swimming to reading?

- (d) How many children are there in the class?

4. The table shows the number of hours Sarah spent studying each day in a week.

Days of the week	Number of hours
Monday	8
Tuesday	10
Wednesday	7
Thursday	12
Friday	6

Draw a bar graph to show the data given in the table.



Exercise 2 : Probability

1. Johnson rolls a regular six-sided die 30 times. Each time he rolls the die, he records the number on the die in a tally chart as shown below.

1	2	3	4	5	6
////	###	### ///	### /	///	////

- (a) Make a line plot of the data given in the tally chart.

- (b) Is it likely, unlikely, certain or impossible for John to get the number 0 on the die when he rolls it?
- _____

2. Fill in the blanks.

Noah has
12 red counters,
8 blue counters,
20 yellow counters and
3 green counters.

He puts all the counters in a box.

Then he picks one counter each time without looking into the box.

He does not put the counter back into the box.

(a) Is he likely to pick a green counter?

(b) Is he more likely to pick a blue counter than a red counter?

(c) Is he more likely to pick a yellow counter or a blue counter?

(d) Which counter is he most likely to pick?

Unit 6 : Length

Friendly Notes

Meters and Centimeters

The meter (m) and centimeter (cm) are units of length.

$$1 \text{ m} = 100 \text{ cm}$$

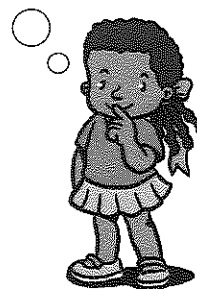
1. Write 2 m 64 cm in cm.

2 m 64 cm is
64 cm more
than 2 m.



$$2 \text{ m } 64 \text{ cm} = 264 \text{ cm}$$

$$\begin{aligned} 2 \text{ m} &= 2 \times 100 \text{ cm} \\ &= 200 \text{ cm} \\ 2 \text{ m } 64 \text{ cm} &= 200 \text{ cm} + 64 \text{ cm} \end{aligned}$$



2. Write 839 cm in m and cm.

$$\begin{aligned} 839 \text{ cm} &= 800 \text{ cm} + 39 \text{ cm} \\ 8 \text{ m} &= 800 \text{ cm} \end{aligned}$$

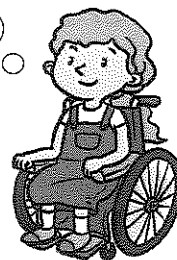
$$839 \text{ cm} = 8 \text{ m } 39 \text{ cm}$$



3. Find the sum of 2 m 35 cm and 60 cm.

$$\begin{array}{r} 2 \text{ m } 35 \text{ cm} + 60 \text{ cm} \\ \quad \quad \quad \swarrow \quad \searrow \\ \quad \quad \quad 95 \text{ cm} \end{array}$$

$$2 \text{ m } 35 \text{ cm} + 60 \text{ cm} = 2 \text{ m } 95 \text{ cm}$$



4. Find the difference between 3 m 18 cm and 1 m 30 cm.

$$3 \text{ m } 18 \text{ cm} = 318 \text{ cm}$$

$$1 \text{ m } 30 \text{ cm} = 130 \text{ cm}$$

$$\begin{aligned} 318 \text{ cm} - 130 \text{ cm} &= 188 \text{ cm} \\ &= 1 \text{ m } 88 \text{ cm} \end{aligned}$$

$$\begin{array}{r} 2 \text{ m } \\ 318 \\ - 130 \\ \hline 188 \end{array}$$



Kilometers

The kilometer (km) is another unit of length.

We use the kilometer to measure long distances such as the length of a road or the distance we travel from one place to another.

$$1 \text{ km} = 1000 \text{ m}$$

1. Write 4 km 208 m in m.

$$\begin{aligned} 4 \text{ km} &= 4 \times 1000 \text{ m} \\ &= 4000 \text{ m} \end{aligned}$$

$$\begin{aligned} 4 \text{ km } 208 \text{ m} \\ &= 4000 \text{ m} + 208 \text{ m} \end{aligned}$$

$$4 \text{ km } 208 \text{ m} = 4208 \text{ m}$$



2. Write 7090 m in km and m.

$$\begin{aligned} 7090 \text{ m} &= 7000 \text{ m} + 90 \text{ m} \\ 7 \text{ km} &= 7000 \text{ m} \end{aligned}$$

$$7090 \text{ m} = 7 \text{ km } 90 \text{ m}.$$



3. Find the value of $1\text{ km } 206\text{ m} + 1\text{ km } 590\text{ m}$.

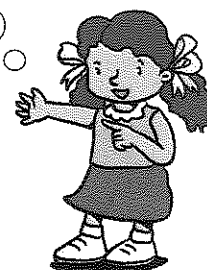
$$1\text{ km } 206\text{ m} \xrightarrow{+ 1\text{ km}} 2\text{ km } 206\text{ m} \xrightarrow{+ 590\text{ m}} 2\text{ km } 796\text{ m}$$



$$1\text{ km } 206\text{ m} + 1\text{ km } 590\text{ m} = 2\text{ km } 796\text{ m}$$

4. Find the value of $2\text{ km} - 1\text{ km } 207\text{ m}$.

$$\begin{aligned} 2\text{ km} - 1\text{ km} &= 1\text{ km} \\ &= 1000\text{ m} \\ 1000\text{ m} - 207\text{ m} &= 793\text{ m} \end{aligned}$$



$$2\text{ km} - 1\text{ km } 207\text{ m} = 793\text{ m}$$

Yards, Feet and Inches

The yard (yd), foot (ft) and inch (in.) are other units of length.

1 yd is shorter than a meter.

$$1 \text{ yd} = 3 \text{ ft}$$

$$1 \text{ ft} = 12 \text{ in.}$$

1. Write 12 yd in feet.

$$1 \text{ yd} = 3 \text{ ft}$$

$$12 \text{ yd} = 12 \times 3 \text{ ft}$$
$$= 36 \text{ ft}$$

$$12 \text{ yd} = 36 \text{ ft}$$



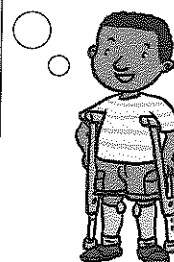
2. Write 15 yd 4 ft in feet.

$$1 \text{ yd} = 3 \text{ ft}$$

$$15 \text{ yd} = 15 \times 3 \text{ ft}$$
$$= 45 \text{ ft}$$

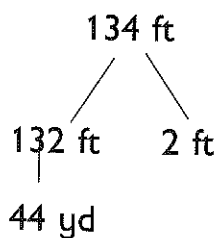
$$15 \text{ yd } 4 \text{ ft} = 45 \text{ ft} + 4 \text{ ft}$$

$$15 \text{ yd } 4 \text{ ft} = 49 \text{ ft}$$



3. Write 134 ft in yards and feet.

$$134 \text{ ft} = 44 \text{ yd } 2 \text{ ft}$$



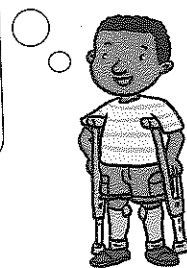
4. Write 2 ft 8 in. in inches.

$$1 \text{ ft} = 12 \text{ in.}$$

$$2 \text{ ft} = 2 \times 12 \text{ in.}$$

$$2 \text{ ft } 8 \text{ in.} = 24 + 8 \text{ in.} \\ = 32 \text{ in.}$$

$$2 \text{ ft } 8 \text{ in.} = 32 \text{ in.}$$



5. Find the value of 2 yd 4 ft + 3 yd 5 ft in yards.

$$2 \text{ yd } 4 \text{ ft} \xrightarrow{+ 3 \text{ yd}} 5 \text{ yd } 4 \text{ ft} \xrightarrow{+ 5 \text{ ft}} 5 \text{ yd } 9 \text{ ft}$$



$$2 \text{ yd } 4 \text{ ft} + 3 \text{ yd } 5 \text{ ft} = 5 \text{ yd } 9 \text{ ft} \\ = 8 \text{ yd}$$

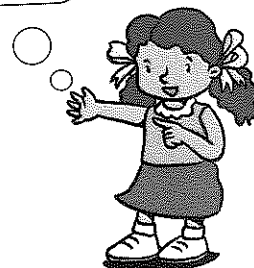
$$1 \text{ yd} = 3 \text{ ft} \\ 3 \text{ yd} = 9 \text{ ft}$$



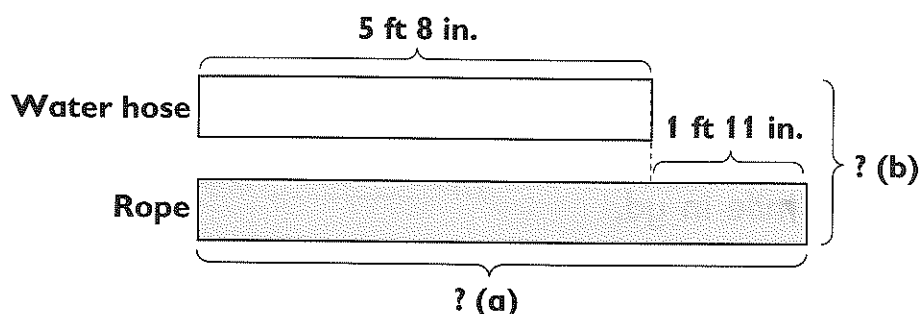
6. Find the value of 2 ft - 9 in.

$$2 \text{ ft} = 2 \times 12 \text{ in.} \\ = 24 \text{ in.}$$

$$2 \text{ ft} - 9 \text{ in.} = 24 \text{ in.} - 9 \text{ in.} \\ = 15 \text{ in.}$$



7. A water hose is 5 ft 8 in. long.
 A rope is 1 ft 11 in. longer than the water hose.
 (a) Find the length of the rope.
 (b) Find the total length of the water hose and the rope.



(a) $5 \text{ ft } 8 \text{ in.} \xrightarrow{+ 1 \text{ ft}} 6 \text{ ft } 8 \text{ in.} \xrightarrow{+ 11 \text{ in.}} 7 \text{ ft } 7 \text{ in.}$

$5 \text{ ft } 8 \text{ in.} + 1 \text{ ft } 11 \text{ in.} = 7 \text{ ft } 7 \text{ in.}$

The length of the rope is 7 ft 7 in.



(b) $5 \text{ ft } 8 \text{ in.} \xrightarrow{+ 7 \text{ ft}} 12 \text{ ft } 8 \text{ in.} \xrightarrow{+ 7 \text{ in.}} 13 \text{ ft } 3 \text{ in.}$

$5 \text{ ft } 8 \text{ in.} + 7 \text{ ft } 7 \text{ in.} = 13 \text{ ft } 3 \text{ in.}$

The total length of the water hose and the rope is 13 ft 3 in.



Miles

The mile (mi) is another unit of length.
One mile is longer than 1 km.
We measure long distances in miles.

$$1 \text{ mile} = 5280 \text{ ft}$$

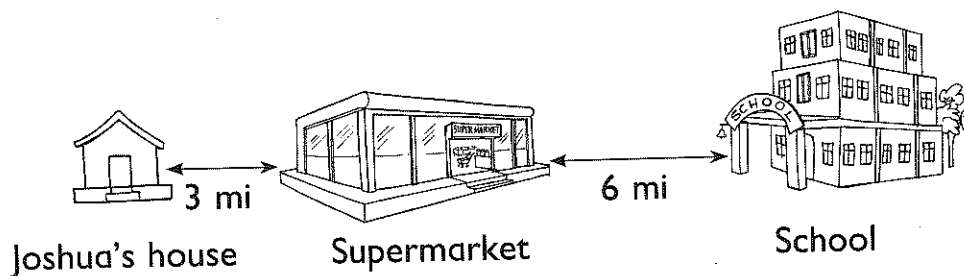
1. Write 1 mile in yd.

$$\begin{aligned} 1 \text{ mile} &= 5280 \text{ ft} \\ &= 1760 \text{ yd} \end{aligned}$$

$$1 \text{ yd} = 3 \text{ ft}$$



2. Find the distance between Joshua's house and the school.



The distance between Joshua's house and the school is 9 mi.

Exercise 1 : Meters and Centimeters

1. Write the missing numbers.

- (a) $4 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$
- (b) $6 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$
- (c) $300 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$
- (d) $900 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$
- (e) $1 \text{ m } 10 \text{ cm} = \underline{\hspace{2cm}} \text{ cm}$
- (f) $5 \text{ m } 31 \text{ cm} = \underline{\hspace{2cm}} \text{ cm}$
- (g) $723 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$
- (h) $48 \text{ cm} + \underline{\hspace{2cm}} \text{ cm} = 1 \text{ m}$
- (i) $1 \text{ m} - \underline{\hspace{2cm}} \text{ cm} = 25 \text{ cm}$

2. Fill in the missing numbers.

- (a) $7 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$
- (b) $500 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$
- (c) $120 \text{ cm} + \underline{\hspace{2cm}} \text{ cm} = 2 \text{ m}$
- (d) $2 \text{ m} = 1 \text{ m } 62 \text{ cm} + \underline{\hspace{2cm}} \text{ cm}$
- (e) $1 \text{ m } 55 \text{ cm} + 45 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$
- (f) $2 \text{ m } 25 \text{ cm} + 75 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$

3. Add.

(a) $2 \text{ m } 77 \text{ cm} + 2 \text{ m } 88 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(b) $3 \text{ m } 29 \text{ cm} + 78 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(c) $4 \text{ m } 56 \text{ cm} + 3 \text{ m } 48 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(d) $56 \text{ cm} + 5 \text{ m } 54 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(e) $3 \text{ m } 8 \text{ cm} + 1 \text{ m } 92 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

4. Subtract.

(a) $2 \text{ m } 47 \text{ cm} - 30 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(b) $3 \text{ m } 2 \text{ cm} - 2 \text{ m } 3 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(c) $7 \text{ m } 21 \text{ cm} - 3 \text{ m } 94 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(d) $4 \text{ m } 34 \text{ cm} - 1 \text{ m } 44 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

(e) $5 \text{ m } 20 \text{ cm} - 3 \text{ m } 40 \text{ cm} = \underline{\hspace{2cm}} \text{ m } \underline{\hspace{2cm}} \text{ cm}$

Exercise 2 : Kilometers

1. Fill in the missing numbers.

(a) $3 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

(b) $10 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

(c) $2000 \text{ m} = \underline{\hspace{2cm}} \text{ km}$

(d) $5000 \text{ m} = \underline{\hspace{2cm}} \text{ km}$

(e) $1 \text{ km } 305 \text{ m} = \underline{\hspace{2cm}} \text{ m}$

(f) $6007 \text{ m} = \underline{\hspace{2cm}} \text{ km } \underline{\hspace{2cm}} \text{ m}$

2. Add or subtract.

(a) $1 \text{ km } 300 \text{ m} + 400 \text{ m} = \underline{\hspace{2cm}} \text{ km } \underline{\hspace{2cm}} \text{ m}$

(b) $2 \text{ km } 310 \text{ m} + 1 \text{ km } 690 \text{ m} = \underline{\hspace{2cm}} \text{ km } \underline{\hspace{2cm}} \text{ m}$

(c) $1 \text{ km } 430 \text{ m} - 210 \text{ m} = \underline{\hspace{2cm}} \text{ km } \underline{\hspace{2cm}} \text{ m}$

(d) $4 \text{ km } 8 \text{ m} - 1 \text{ km } 900 \text{ m} = \underline{\hspace{2cm}} \text{ km } \underline{\hspace{2cm}} \text{ m}$

3. Write the missing numbers.

(a) $1 \text{ km} = 350 \text{ m} + \underline{\hspace{2cm}} \text{ m}$

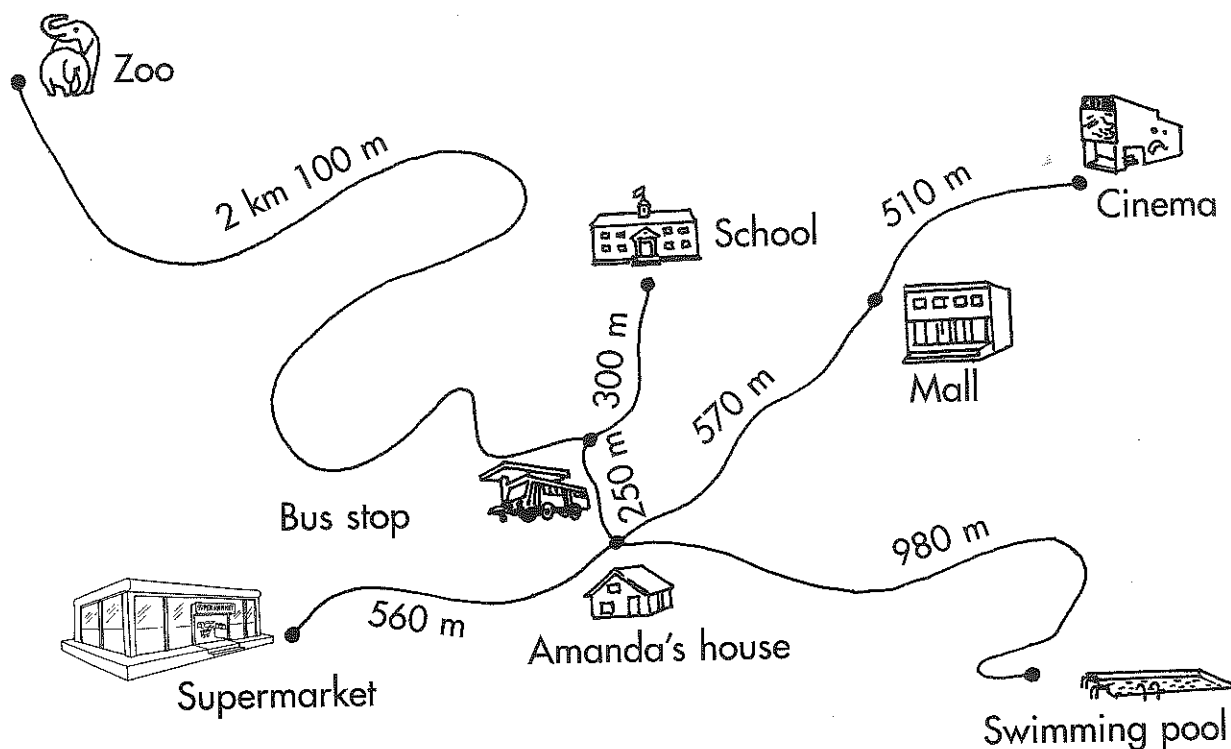
(b) $750 \text{ m} + \underline{\hspace{2cm}} \text{ m} = 1 \text{ km}$

(c) $470 \text{ m} + 530 \text{ m} = \underline{\hspace{2cm}} \text{ km}$

(d) $1 \text{ km} - \underline{\hspace{2cm}} \text{ m} = 640 \text{ m}$

(e) $\underline{\hspace{2cm}} \text{ m} = 1 \text{ km} - 30 \text{ m}$

4. Study the map and answer the questions below.



- (a) The distance from the swimming pool to the zoo is _____ km _____ m.
- (b) The cinema is _____ m nearer to the mall than Amanda's house.
- (c) The zoo is _____ km _____ m further from Amanda's house than the swimming pool.
- (d) Amanda cycles to her school every morning and cycles back home.
She cycles _____ km _____ m altogether each day.

Exercise 3 : Yards, Feet and Inches

1. Write the missing numbers.

- (a) $5 \text{ yd} = \underline{\hspace{2cm}} \text{ ft}$
- (b) $87 \text{ yd } 2 \text{ ft} = \underline{\hspace{2cm}} \text{ ft}$
- (c) $308 \text{ yd } 1 \text{ ft} = \underline{\hspace{2cm}} \text{ ft}$
- (d) $9 \text{ ft} = \underline{\hspace{2cm}} \text{ in.}$
- (e) $6 \text{ ft } 10 \text{ in.} = \underline{\hspace{2cm}} \text{ in.}$
- (f) $9 \text{ ft } 9 \text{ in.} = \underline{\hspace{2cm}} \text{ in.}$
- (g) $36 \text{ ft} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
- (h) $110 \text{ ft} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
- (i) $37 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$
- (j) $24 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$

2. Fill in the missing numbers.

- (a) $3 \text{ ft} + \underline{\hspace{2cm}} \text{ ft} = 3 \text{ yd}$
- (b) $5 \text{ yd} = 2 \text{ ft} + \underline{\hspace{2cm}} \text{ ft}$
- (c) $3 \text{ yd} - 2 \text{ ft} = \underline{\hspace{2cm}} \text{ ft}$
- (d) $6 \text{ ft} - 3 \text{ ft} = \underline{\hspace{2cm}} \text{ yd}$
- (e) $5 \text{ in.} + \underline{\hspace{2cm}} \text{ in.} = 2 \text{ ft}$
- (f) $4 \text{ ft} = 2 \text{ ft} + \underline{\hspace{2cm}} \text{ in.}$
- (g) $2 \text{ ft} - 11 \text{ in.} = \underline{\hspace{2cm}} \text{ in.}$
- (h) $11 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$

3. Add.

- (a) $5 \text{ yd } 1 \text{ ft} + 2 \text{ ft} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
(b) $7 \text{ yd } 2 \text{ ft} + 2 \text{ ft} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
(c) $6 \text{ yd } 1 \text{ ft} + 3 \text{ yd } 2 \text{ ft} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
(d) $5 \text{ ft } 11 \text{ in.} + 7 \text{ ft} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$
(e) $6 \text{ ft } 6 \text{ in.} + 6 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$
(f) $4 \text{ ft } 7 \text{ in.} + 4 \text{ ft } 8 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$
(g) $9 \text{ in.} + 2 \text{ ft } 6 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$

4. Subtract.

- (a) $4 \text{ yd } 1 \text{ ft} - 2 \text{ yd} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
(b) $7 \text{ yd } 1 \text{ ft} - 2 \text{ ft} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
(c) $8 \text{ yd } 1 \text{ ft} - 7 \text{ yd } 2 \text{ ft} = \underline{\hspace{2cm}} \text{ yd } \underline{\hspace{2cm}} \text{ ft}$
(d) $10 \text{ ft } 10 \text{ in.} - 6 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$
(e) $6 \text{ ft } 3 \text{ in.} - 1 \text{ ft } 6 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$
(f) $3 \text{ ft } 8 \text{ in.} - 2 \text{ ft } 10 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$
(g) $1 \text{ ft } 5 \text{ in.} - 11 \text{ in.} = \underline{\hspace{2cm}} \text{ ft } \underline{\hspace{2cm}} \text{ in.}$

5. Fill in the missing numbers.

- (a) $3 \text{ yd } 1 \text{ ft} + \underline{\hspace{2cm}} \text{ ft} = 4 \text{ yd}$
(b) $\underline{\hspace{2cm}} \text{ ft} = 7 \text{ yd} - 1 \text{ ft}$
(c) $5 \text{ ft } 7 \text{ in.} + \underline{\hspace{2cm}} \text{ in.} = 6 \text{ ft } 5 \text{ in.}$
(d) $\underline{\hspace{2cm}} \text{ in.} = 1 \text{ ft} - 9 \text{ in.}$

Exercise 4 : Miles

1. Fill in the blanks

(a) 1 mile = _____ ft

(b) $\frac{1}{2}$ mile = _____ ft

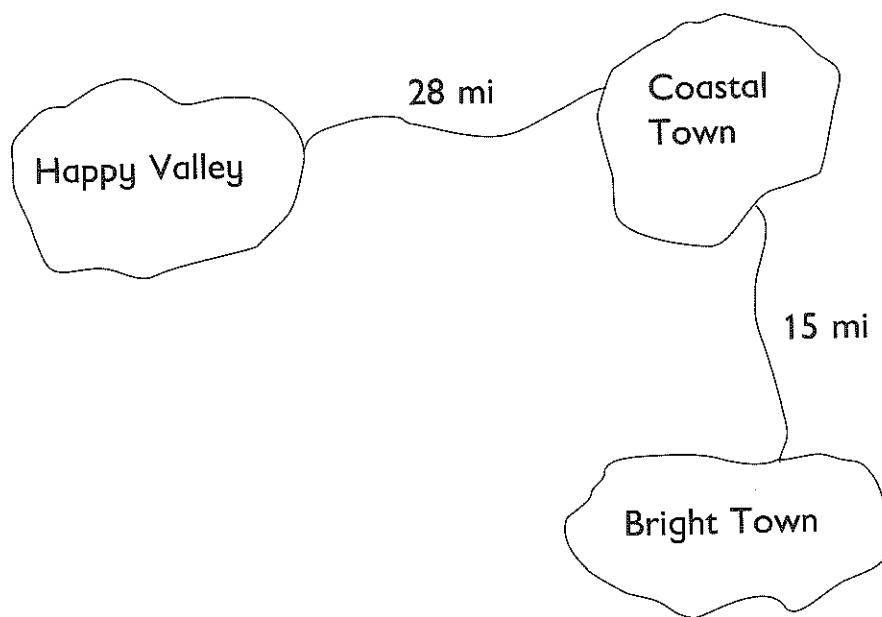
(c) $\frac{1}{4}$ mile = _____ ft

(d) 1 mile = _____ yd

(e) $\frac{1}{2}$ mile = _____ yd

(f) $\frac{1}{4}$ mile = _____ yd

2. Fill in the blanks.



- (a) The distance between Happy Valley and Coastal Town is _____ mi.
- (b) The distance between Happy Valley and Bright Town is _____ mi.

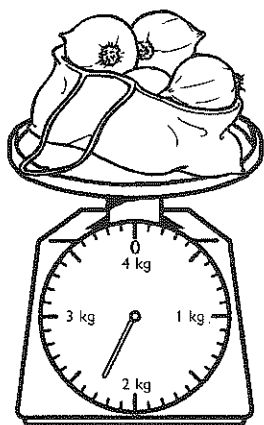
Unit 7 : Weight

Friendly Notes

Kilograms and Grams

The kilogram (kg) and gram (g) are units of weight.

$$1 \text{ kg} = 1000 \text{ g}$$

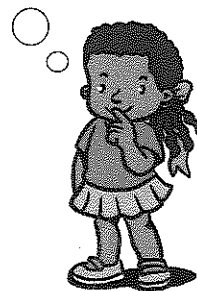


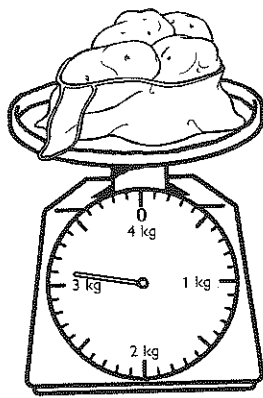
The bag of onions weighs 2 kg 300 g.

It weighs 2300 g.

$$\begin{aligned} 2 \text{ kg} &= 2 \times 1000 \text{ g} \\ &= 2000 \text{ g} \end{aligned}$$

$$2 \text{ kg } 300 \text{ g} = 2000 \text{ g} + 300 \text{ g}$$





The bag of potatoes weighs 3 kg 100 g.

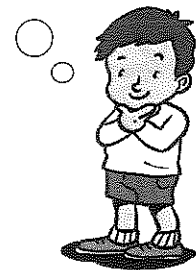
It weighs 3100 g.

$$3100 - 2300 = 800$$

$$\begin{aligned} 3 \text{ kg} &= 3 \times 1000 \text{ g} \\ &= 3000 \text{ g} \end{aligned}$$

$$3 \text{ kg } 100 \text{ g} = 3000 \text{ g} + 100 \text{ g}$$

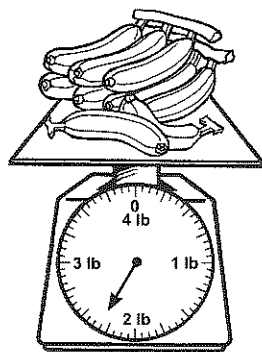
The bag of potatoes is 800 g heavier than the bag of onions.



Pounds and Ounces

The pound (lb) and ounce (oz) are other units of weight.

$$1 \text{ lb} = 16 \text{ oz}$$

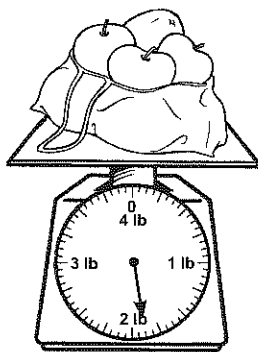


The weight of the bananas is 2 lb 5 oz.

$$\begin{aligned} 1 \text{ lb} &= 16 \text{ oz} \\ 2 \text{ lb} &= 16 \times 2 \\ &= 32 \text{ oz} \\ 2 \text{ lb } 5 \text{ oz} &= 32 \text{ oz} + 5 \text{ oz} \end{aligned}$$

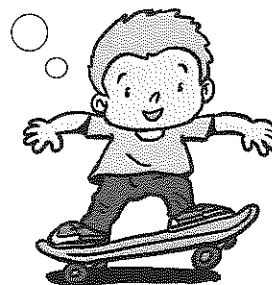


They weigh 37 oz.



The weight of the bag of apples is 1 lb 14 oz.

$$\begin{aligned} 1 \text{ lb} &= 16 \text{ oz} \\ 1 \text{ lb } 14 \text{ oz} &= 16 \text{ oz} + 14 \text{ oz} \end{aligned}$$



It weighs 30 oz.

$$37 - 30 = 7$$

The bananas weigh 7 oz more than the bag of apples.

Word Problems

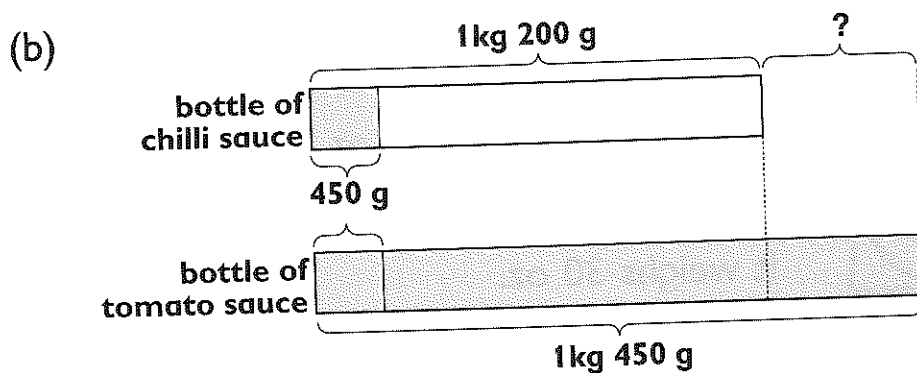
Models can help us solve word problems on weight.

1. A bottle of chilli sauce weighs 1 kg 200 g.
A bottle of tomato sauce weighs 1 kg 450 g.
Each empty bottle weighs 450 g.
- (a) How many grams of chilli sauce are there in the bottle?
- (b) How much heavier is the bottle of tomato sauce than the chilli sauce?

(a) $1 \text{ kg } 200 \text{ g} = 1000 \text{ g} + 200 \text{ g}$
 $= 1200 \text{ g}$

$$1200 \text{ g} - 450 \text{ g} = 750 \text{ g}$$

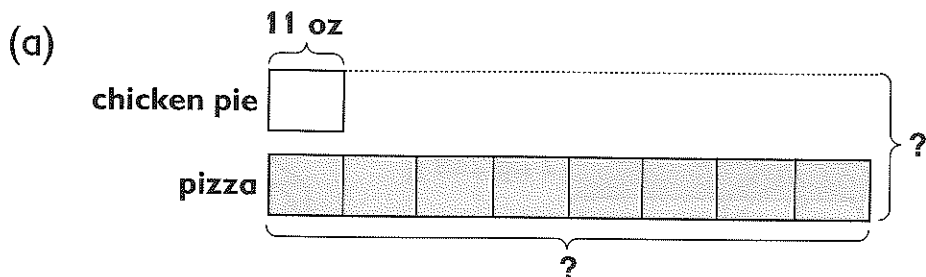
There are 750 g of chilli sauce in the bottle.



$$1 \text{ kg } 450 \text{ g} - 1 \text{ kg } 200 \text{ g} = 250 \text{ g}$$

The bottle of tomato sauce is 250 g heavier than the bottle of chilli sauce.

2. A chicken pie weighs 11 oz:
 A pizza is 8 times as heavy as the chicken pie.
- (a) What is the weight of the pizza in pounds and ounces?
 (b) What is the total weight of the chicken pie and pizza in ounces?



$$11 \times 8 \text{ oz} = 88 \text{ oz}$$

$$= 5 \text{ lb } 8 \text{ oz}$$

$$1 \text{ lb} = 16 \text{ oz}$$

$$88 - 16 = 72$$

$$72 - 16 = 56$$

$$56 - 16 = 40$$

$$40 - 16 = 24$$

$$24 - 16 = 8$$

I can subtract 16 five times from 88 and have 8 left over.

So, 88 oz = 5 lb 8 oz

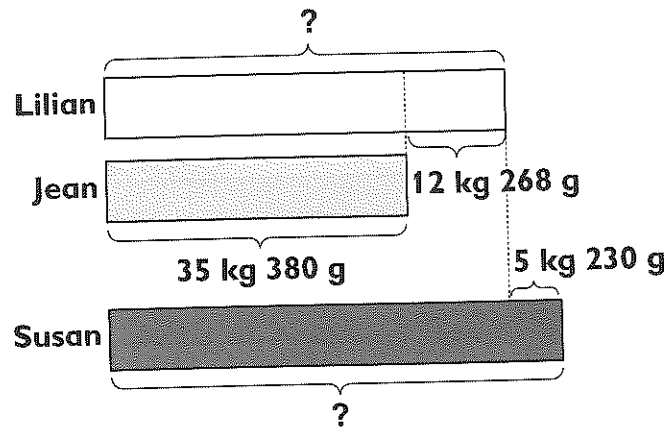
The weight of the pizza is 5 lb 8 oz.



(b) $11 \text{ oz} + 88 \text{ oz} = 99 \text{ oz}$

The total weight of the chicken pie and the pizza is 99 oz.

3. Lilian is 12 kg 268 g heavier than Jean.
 Jean weighs 35 kg 380 g.
 Lilian is 5 kg 230 g lighter than Susan.
 Find Susan's weight in kilograms and grams.



$$35 \text{ kg } 380 \text{ g} \xrightarrow{+ 12 \text{ kg}} 47 \text{ kg } 380 \text{ g} \xrightarrow{+ 268 \text{ g}} 47 \text{ kg } 648 \text{ g}$$

$$35 \text{ kg } 380 \text{ g} + 12 \text{ kg } 268 \text{ g} = 47 \text{ kg } 648 \text{ g}$$

Lilian weighs 47 kg 648 g.

$$47 \text{ kg } 648 \text{ g} + 5 \text{ kg } 230 \text{ g} = 52 \text{ kg } 878 \text{ g}$$

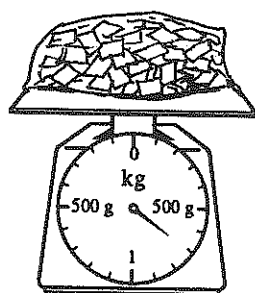
Susan's weight is 52 kg 878 g.



Exercise 1 : Kilograms and Grams

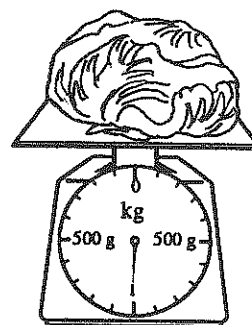
1. Write the weight of each of the following.

(a)



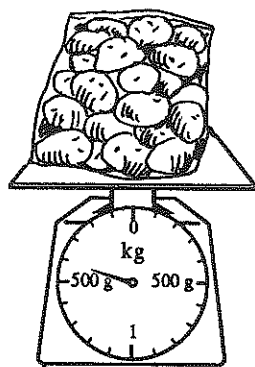
_____ kg _____ g

(b)



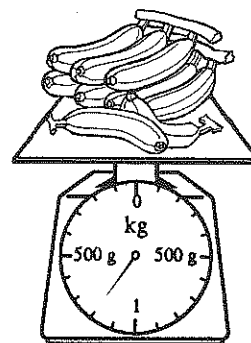
_____ kg _____ g

(c)



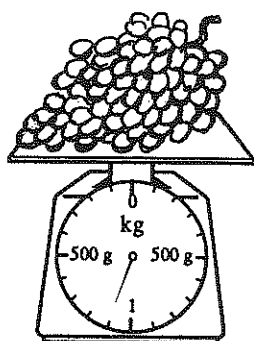
_____ kg _____ g

(d)



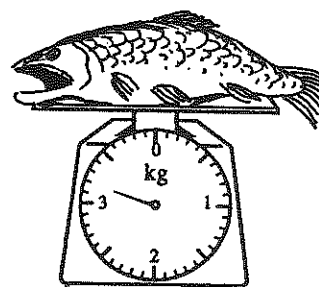
_____ kg _____ g

(e)



_____ kg _____ g

(f)



_____ kg _____ g

2. Write in kilograms and grams.

(a) $1025 \text{ g} = \underline{\hspace{2cm}} \text{ kg } \underline{\hspace{2cm}} \text{ g}$

(b) $2100 \text{ g} = \underline{\hspace{2cm}} \text{ kg } \underline{\hspace{2cm}} \text{ g}$

(c) $5007 \text{ g} = \underline{\hspace{2cm}} \text{ kg } \underline{\hspace{2cm}} \text{ g}$

(d) $8050 \text{ g} = \underline{\hspace{2cm}} \text{ kg } \underline{\hspace{2cm}} \text{ g}$

3. Write in grams.

(a) $1 \text{ kg } 300 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

(b) $3 \text{ kg } 80 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

(c) $4 \text{ kg } 9 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

(d) $5 \text{ kg } 125 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

(e) $6 \text{ kg } 10 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

(f) $7 \text{ kg } 1 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

4. Write the missing numbers.

(a) $630 \text{ g} + \underline{\hspace{2cm}} \text{ g} = 1 \text{ kg}$

(b) $\underline{\hspace{2cm}} \text{ g} + 950 \text{ g} = 1 \text{ kg}$

(c) $805 \text{ g} + 195 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

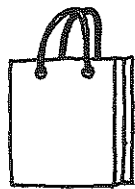
(d) $1 \text{ kg} - \underline{\hspace{2cm}} \text{ g} = 270 \text{ g}$

(e) $1 \text{ kg} - 540 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

(f) $\underline{\hspace{2cm}} \text{ kg} - 360 \text{ g} = 640 \text{ g}$

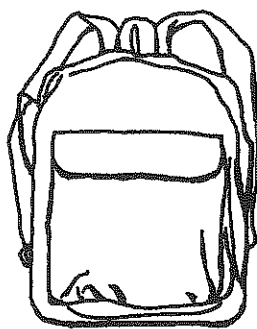
(g) $1 \text{ kg} = 5 \text{ g} + \underline{\hspace{2cm}} \text{ g}$

5. Fill in the blanks.



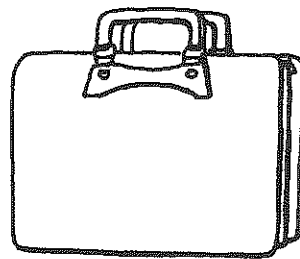
A

850 g



B

2 kg



C

1 kg 990 g

- (a) Bag _____ is the lightest.
- (b) Bag _____ is the heaviest.
- (c) Bag _____ is heavier than Bag C.
- (d) The total weight of Bag A and Bag B is
_____ kg _____ g.
- (e) Bag B is _____ g heavier than Bag C.
- (f) The difference in weight between Bag _____
and Bag _____ is 1 kg 150 g.

6. Do these.

- (a) (i) Total weight of the box of tissue and the bag of mixed nuts

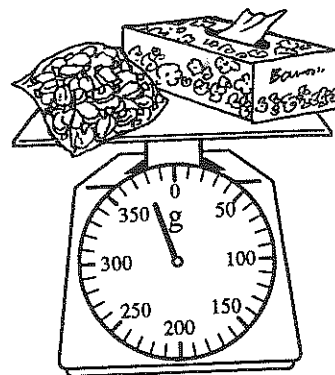
= _____

- (ii) The weight of the bag of mixed nuts is 250 g.

Weight of the box of tissue

= _____

- (iii) The bag of mixed nuts is _____ g heavier than the box of tissue.



- (b) (i) Total weight of the pineapple and 3 apples

= _____

- (ii) The pineapple weighs 2 kg.

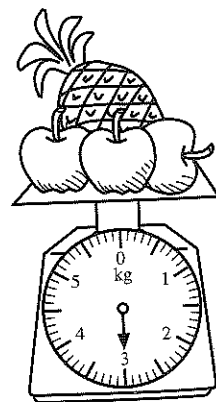
Weight of the 3 apples

= _____

- (iii) The cost of the 3 apples is \$1.00. Mr. Ricci paid \$5 altogether.

Cost of the pineapple

= _____



Exercise 2 : Word Problems

1. Do these. Show your work clearly.
You may draw models to help you.

(a) The weight of an empty vase is 2 kg 300 g.
Mary puts 10 stalks of flowers into the vase.
The weight of each stalk of flower is 40 g.
What is the total weight of the vase and the flowers?

(b) Caroline weighs 22 kg 550 g.
Her sister is twice as heavy as Caroline.
What is her sister's weight?

- (c) A lemon is 8 times as light as a cantaloupe.
The cantaloupe weighs 4 kg 320 g.
What is the weight of the lemon?
- (d) A chicken weighs 2 kg 800 g.
A turkey weighs 6 kg 230 g.
How much heavier is the turkey?
What is the total weight of the chicken and the turkey?
- (e) There are 9 oranges in a box.
Each orange weighs 325 g.
The box of oranges weighs 3 kg 485 g.
Find the weight of the empty box.

Exercise 3 : Pounds and Ounces

1. Write in pounds and ounces.

(a) $18 \text{ oz} = \underline{\hspace{2cm}} \text{ lb } \underline{\hspace{2cm}} \text{ oz}$

(b) $25 \text{ oz} = \underline{\hspace{2cm}} \text{ lb } \underline{\hspace{2cm}} \text{ oz}$

(c) $16 \text{ oz} = \underline{\hspace{2cm}} \text{ lb } \underline{\hspace{2cm}} \text{ oz}$

2. Write in ounces.

(a) $4 \text{ lb} = \underline{\hspace{2cm}} \text{ oz}$

(b) $2 \text{ lb } 5 \text{ oz} = \underline{\hspace{2cm}} \text{ oz}$

(c) $6 \text{ lb } 10 \text{ oz} = \underline{\hspace{2cm}} \text{ oz}$

(d) $3 \text{ lb } 12 \text{ oz} = \underline{\hspace{2cm}} \text{ oz}$

(e) $5 \text{ lb } 14 \text{ oz} = \underline{\hspace{2cm}} \text{ oz}$

(f) $9 \text{ lb } 6 \text{ oz} = \underline{\hspace{2cm}} \text{ oz}$

3. Write the missing numbers.

(a) $2 \text{ oz} + \underline{\hspace{2cm}} \text{ oz} = 1 \text{ lb}$

(b) $\underline{\hspace{2cm}} \text{ oz} + 20 \text{ oz} = 2 \text{ lb}$

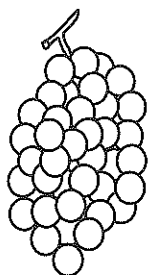
(c) $24 \text{ oz} + 24 \text{ oz} = \underline{\hspace{2cm}} \text{ lb}$

(d) $4 \text{ lb} - \underline{\hspace{2cm}} \text{ oz} = 52 \text{ oz}$

(e) $5 \text{ lb} - 5 \text{ oz} = \underline{\hspace{2cm}} \text{ oz}$

(f) $\underline{\hspace{2cm}} \text{ lb} - 3 \text{ oz} = 29 \text{ oz}$

4. Fill in the blanks.



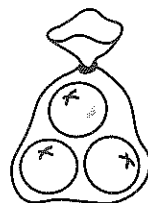
A

1 lb 3 oz



B

7 oz



C

20 oz

- (a) Item _____ is the heaviest.
- (b) Item A weighs _____ oz.
- (c) Item _____ is lighter than Item A.
- (d) Item B is _____ oz lighter than Item A.
- (e) The difference in weight between Item _____ and Item _____ is 1 oz.
- (f) The total weight of all three items is _____ lb _____ oz.

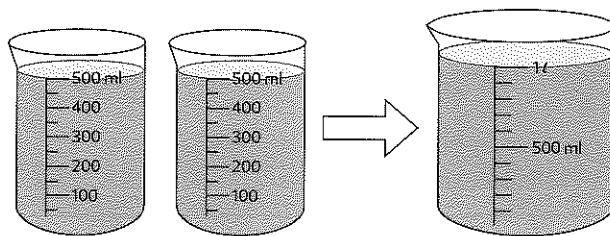
Unit 8 : Capacity

Friendly Notes

Liters and Milliliters

The liter (ℓ) and milliliter (ml) are units of capacity.
The capacity of a container is the amount it can hold.

$$1 \ell = 1000 \text{ ml}$$



1. Write 4069 ml in ℓ and ml.

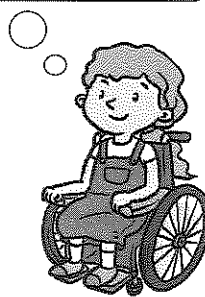
$$4069 \text{ ml} = 4 \ell 69 \text{ ml}$$

$$\begin{aligned} 4069 \text{ ml} &= 4000 \text{ ml} + 69 \text{ ml} \\ 4 \ell &= 4000 \text{ ml} \end{aligned}$$

2. Write 8 \ell 134 ml in ml.

$$8 \ell 134 \text{ ml} = 8134 \text{ ml}$$

$$\begin{aligned} 8 \ell &= 8 \times 1000 \\ &= 8000 \text{ ml} \\ 8 \ell 134 \text{ ml} &= 8000 \text{ ml} + 134 \text{ ml} \end{aligned}$$

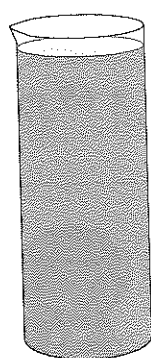


Gallons, Quarts, Pints and Cups

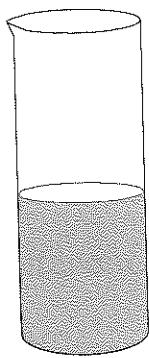
The gallon (gal), quart (qt), pint (pt) and cup (c) are other units of capacity.

We usually measure a bigger amount of water in gallons and quarts.

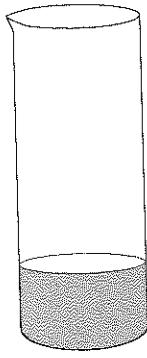
1 pint	= 2 cups
1 quart	= 2 pints
	= 4 cups
1 half-gallon	= 2 quarts
	= 4 pints
	= 8 cups
1 gallon	= 2 half-gallons
	= 4 quarts
	= 8 pints
	= 16 cups



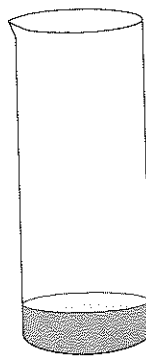
1 gallon
(gal)



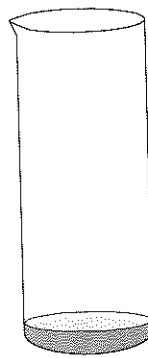
1 half-gallon



1 quart
(qt)



1 pint
(pt)

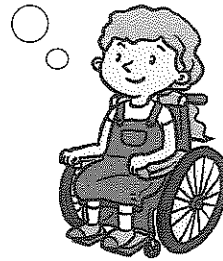


1 cup
(c)

1. Write 2 gal 3 qt in qt.

$$\begin{aligned} 1 \text{ gal} &= 4 \text{ qt} \\ 2 \text{ gal} &= 8 \text{ qt} \\ 2 \text{ gal } 3 \text{ qt} &= 8 \text{ qt} + 3 \text{ qt} \end{aligned}$$

$$2 \text{ gal } 3 \text{ qt} = 11 \text{ qt}$$



2. Write 18 qt in gal and qt.

$$\begin{aligned} 1 \text{ gal} &= 4 \text{ qt} \\ 18 \div 4 &= 4 \text{ R } 2 \end{aligned}$$

$$18 \text{ qt} = 4 \text{ gal } 2 \text{ qt}$$



3. Write 10 pt 4 c in c.

$$\begin{aligned} 1 \text{ pt} &= 2 \text{ c} \\ 10 \text{ pt} &= 10 \times 2 \text{ c} \\ &= 20 \text{ c} \\ 10 \text{ pt } 4 \text{ c} &= 20 \text{ c} + 4 \text{ c} \end{aligned}$$

$$10 \text{ pt } 4 \text{ c} = 24 \text{ c}$$



4. Write 35 c in pt and c.

$$\begin{aligned} 1 \text{ pt} &= 2 \text{ c} \\ 35 \div 2 &= 17 \text{ R } 1 \end{aligned}$$

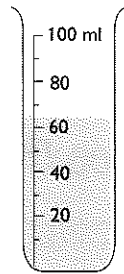
$$35 \text{ c} = 17 \text{ pt } 1 \text{ c}$$



Exercise 1 : Liters and Milliliters

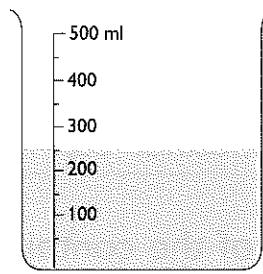
1. How much water is there in each container?

(a)



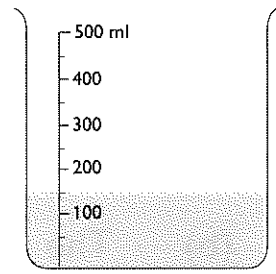
_____ ml

(b)



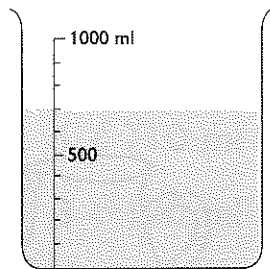
_____ ml

(c)



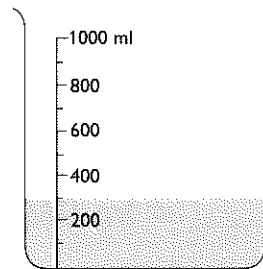
_____ ml

(d)



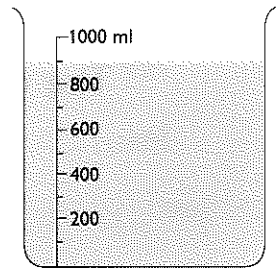
_____ ml

(e)



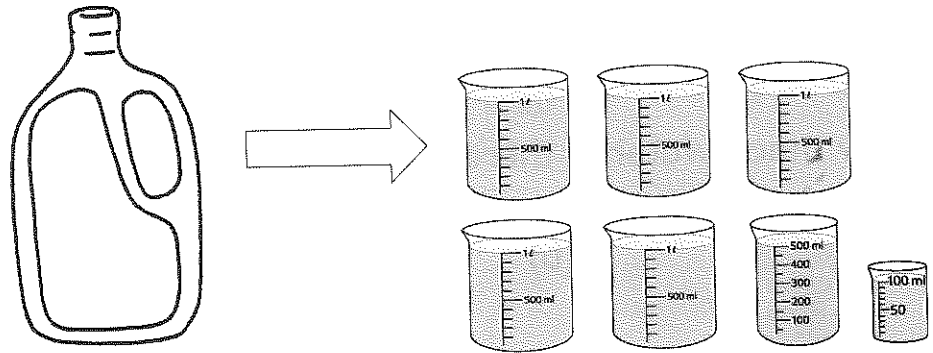
_____ ml

(f)

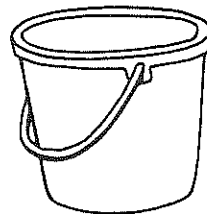


_____ ml

2. Fill in the blanks.



- (a) The above container can hold ____ ℓ ____ ml of water.
- (b) The capacity of the container is ____ ℓ ____ ml.



- (c) The bucket above can hold twice as much water as the container.

The capacity of the bucket is ____ ℓ ____ ml.

- (d) The capacity of this jug is 2 liters.



The bucket holds ____ ℓ ____ ml more water than the jug.

3. Write in milliliters.

- (a) $1 \ell 5 \text{ ml} = \underline{\hspace{2cm}} \text{ ml}$
- (b) $1 \ell 200 \text{ ml} = \underline{\hspace{2cm}} \text{ ml}$
- (c) $2 \ell 15 \text{ ml} = \underline{\hspace{2cm}} \text{ ml}$
- (d) $3 \ell 525 \text{ ml} = \underline{\hspace{2cm}} \text{ ml}$

4. Write in liters and milliliters.

- (a) $1600 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (b) $2895 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (c) $3005 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (d) $3070 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$

5. Add or subtract.

- (a) $1 \ell 200 \text{ ml} + 450 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (b) $3 \ell 650 \text{ ml} + 250 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (c) $1 \ell 710 \text{ ml} + 6 \ell 5 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (d) $3 \ell 170 \text{ ml} + 2 \ell 260 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (e) $4 \ell 65 \text{ ml} + 3 \ell 307 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (f) $3 \ell 620 \text{ ml} - 720 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (g) $4 \ell 450 \text{ ml} - 1 \ell 680 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (h) $5 \ell 970 \text{ ml} - 2 \ell 860 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$
- (i) $6 \ell 5 \text{ ml} - 3 \ell 152 \text{ ml} = \underline{\hspace{2cm}} \ell \underline{\hspace{2cm}} \text{ ml}$

6. Do these. Show your work clearly.
You may draw models to help you.

(a) Mr. Ray poured 9 ℓ 500 ml of oil equally into 5 bottles.
How much oil was there in each bottle?

(b) A fish tank has a capacity of 7 ℓ 470 ml.
It contains 4 ℓ 385 ml of water.
How many more milliliters of water are needed to fill
up the tank?

(c) Rachel has 6 ℓ 950 ml of fruit juice.
She needs 8 ℓ 400 ml of fruit juice for her party.
How much more fruit juice does she need?

Exercise 2 : Gallons, Quarts, Pints and Cups

1. Write in c.

(a) $19 \text{ pt} = \underline{\hspace{2cm}} \text{ c}$

(b) $23 \text{ pt } 1 \text{ c} = \underline{\hspace{2cm}} \text{ c}$

2. Write in pt.

(a) $8 \text{ qt} = \underline{\hspace{2cm}} \text{ pt}$

(b) $10 \text{ qt } 1 \text{ pt} = \underline{\hspace{2cm}} \text{ pt}$

3. Write in qt.

(a) $12 \text{ gal} = \underline{\hspace{2cm}} \text{ qt}$

(b) $33 \text{ gal } 3 \text{ qt} = \underline{\hspace{2cm}} \text{ qt}$

4. Write in gal.

(a) $24 \text{ qt} = \underline{\hspace{2cm}} \text{ gal}$

(b) $48 \text{ qt} = \underline{\hspace{2cm}} \text{ gal}$

5. Add or subtract.

(a) $2 \text{ qt } 1 \text{ pt} + 11 \text{ qt } 1 \text{ pt} = \underline{\hspace{2cm}} \text{ qt } \underline{\hspace{2cm}} \text{ pt}$

(b) $2 \text{ gal } 2 \text{ qt} + 2 \text{ gal } 2 \text{ qt} = \underline{\hspace{2cm}} \text{ gal } \underline{\hspace{2cm}} \text{ qt}$

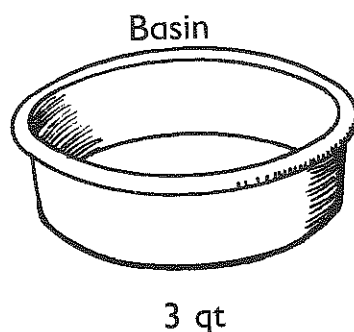
(c) $2 \text{ pt } 1 \text{ c} + 11 \text{ c} = \underline{\hspace{2cm}} \text{ pt } \underline{\hspace{2cm}} \text{ c}$

(d) $617 \text{ pt} - 165 \text{ pt } 1 \text{ c} = \underline{\hspace{2cm}} \text{ pt } \underline{\hspace{2cm}} \text{ c}$

(e) $13 \text{ gal } 1 \text{ qt} - 7 \text{ gal } 2 \text{ qt} = \underline{\hspace{2cm}} \text{ gal } \underline{\hspace{2cm}} \text{ qt}$

(f) $7 \text{ qt} - 7 \text{ pt} = \underline{\hspace{2cm}} \text{ qt } \underline{\hspace{2cm}} \text{ pt}$

6. Fill in the blanks.



(a) The basin holds $\underline{\hspace{2cm}} \text{ qt } \underline{\hspace{2cm}} \text{ c}$ more water than the bottle.

(b) The bottle holds $\underline{\hspace{2cm}} \text{ qt } \underline{\hspace{2cm}} \text{ c}$ less water than the jug.

(c) The total capacity of the three containers is $\underline{\hspace{2cm}} \text{ qt } \underline{\hspace{2cm}} \text{ c}$.

7. Do these. Show all your work clearly.

- (a) A container contains 2 gal 3 qt of water.
1 gal 3 qt more water is needed to fill up the container.

What is the capacity of the container?

- (b) Kathy had 8 gal 3 qt of orange juice.
She gave 4 c of juice to Tyrone and put the remaining juice equally into 4 containers.
How much juice was there in each container?
Give the answer in gallons and cups.

- (c) Mrs. Beck bought 4 cartons of milk.
Each carton contained half a gallon of milk.
If she used 2 pints of milk, how much milk did she have left?
Give the answer in gallons and pints.

Unit 9 : Money

Friendly Notes

Dollars and Cents

The dollar (\$) and cent (¢) are units of money.
100 cents is needed to make one dollar.

$$\$1 = 100¢$$

We write 6 dollars 20 cents as \$6.20.
The dot (.) separates the cents from the dollars.



1. Write \$12.08 in cents.
 $\$12.08 = \$1208¢$

$$\begin{aligned}\$12.08 &= \$12 + 8¢ \\ \$12 &= 12 \times 100¢ \\ &= 1200¢\end{aligned}$$



2. Write 367¢ in dollars and cents.
 $367¢ = \$3.67$



$$\begin{aligned}367¢ &= 300¢ + 67¢ \\ \$1 &= 100¢ \\ \$3 &= 300¢\end{aligned}$$

Addition

We add different amounts of money in the same way we add whole numbers.

Then we put in the dot at the right place, to separate the dollars and the cents.

Find the value of \$4.05 and \$26.85.



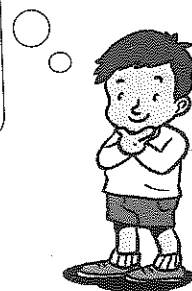
$$\$26.85 \xrightarrow{+\$4} \$30.85 \xrightarrow{+5\text{¢}} \$30.90$$

$$\$4.05 + \$26.85 = \$30.90$$

We can also add like this:

$$\begin{array}{r} \$26.85 \\ + \$4.05 \\ \hline \$30.90 \end{array}$$

$$\begin{array}{r} \overset{1}{2} \overset{1}{6} \overset{1}{8} \overset{1}{5} \\ + \quad 405 \\ \hline 3090 \end{array}$$



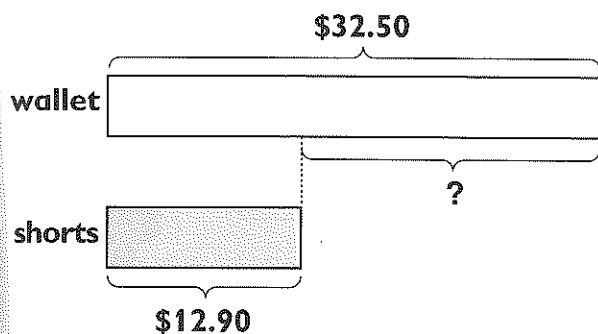
Subtraction

We subtract different amounts of money in the same way we subtract whole numbers.
Then we put in the dot to separate the dollars and the cents.

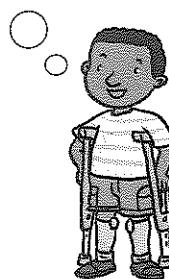
A wallet costs \$32.50.

A pair of shorts costs \$12.90.

How much more does the wallet cost than the pair of shorts?



$$\begin{array}{r} \overset{2}{3} \overset{11}{2} \overset{15}{5} 0 \\ - 1290 \\ \hline 1960 \end{array}$$



$$\$32.50 \xrightarrow{- \$12} \$20.50 \xrightarrow{- 90\text{¢}} \$19.60$$

The wallet costs \$19.60 more than the pair of shorts.

Multiplication and Division

We multiply or divide money in the same way we multiply or divide whole numbers.

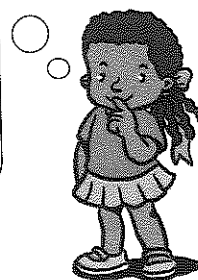
Then we put in the dot to separate the dollars and the cents.

1. Lily saves \$25.50 a week.
How much does she save in 3 weeks?

$$\$25.50 \times 3 = \$76.50$$

$$\begin{array}{r} 25.50 \\ \times \quad 3 \\ \hline 76.50 \end{array}$$

Lily saves \$76.50 in 3 weeks.



2. 3 pounds of minced meat cost \$9.60.
What is the cost of 1 pound of minced meat?

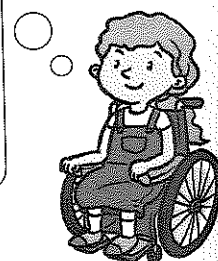
$$\$9.60 = 960\text{¢}$$

$$960 \div 3 = 320$$

$$320\text{¢} = \$3.20$$

The cost of 1 pound of minced meat is \$3.20.

$$\begin{array}{r} 320 \\ 3 \overline{) 960} \\ \underline{9} \\ 06 \\ \underline{6} \\ 00 \end{array}$$

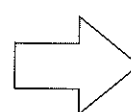


Exercise 1 : Dollars and Cents

1. Write the amount of money in each set.

(a)

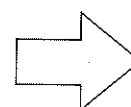
\$10	\$1
\$5	50¢ 5¢



\$

(b)

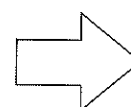
\$20	25¢ 10¢ 5¢
\$1	1¢ \$1



\$

(c)

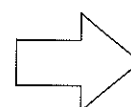
\$50	50¢ 10¢
\$20	10¢ 5¢



\$

(d)

\$50	1¢
\$5	10¢ 1¢



\$



2. Write each amount of money in figures.

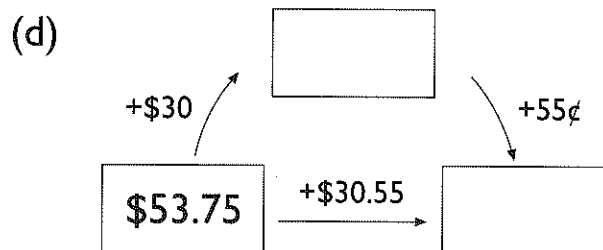
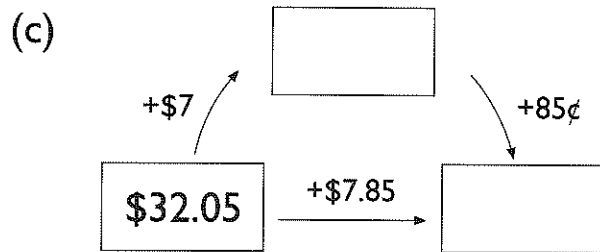
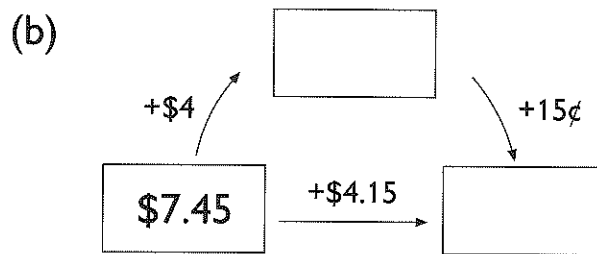
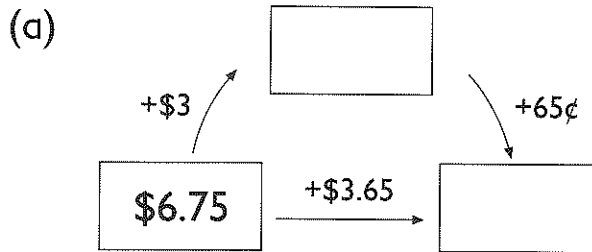
(a)	two dollars ninety-five cents	
(b)	ten dollars twenty cents	
(c)	fourteen dollars fifteen cents	
(d)	twenty-three dollars sixty cents	
(e)	thirty dollars seventy-five cents	
(f)	ninety-four dollars fifteen cents	
(g)	five hundred twelve dollars five cents	
(h)	four thousand, forty dollars	

3. Write each amount of money in words.

(a)	\$5.50	
(b)	\$10.10	
(c)	\$57.75	
(d)	\$83.40	
(e)	\$261	
(f)	\$4567	

Exercise 2 : Addition

1. Write the missing numbers.



2. Add.

(a) $\$1.90 + \$4.10 =$

(b) $\$3.40 + \$5.60 =$

(c) $\$4.85 + \$5.15 =$

(d) $\$6.75 + \$7.25 =$

(e) $\$8.05 + \$9.95 =$

(f) $\$12.55 + \$2.45 =$

(g) $\$12.40 + \$0.99 =$

(h) $\$1.99 + \$15.50 =$



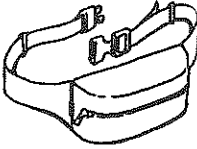
(i) $\$3.95 + \$41.15 =$

(j) $\$36.70 + \$2.95 =$

3. Add.

(a) $\begin{array}{r} \$3.80 \\ + \$4.25 \\ \hline \end{array}$	(b) $\begin{array}{r} \$5.20 \\ + \$6.90 \\ \hline \end{array}$	(c) $\begin{array}{r} \$16.25 \\ + \$13.75 \\ \hline \end{array}$
(d) $\begin{array}{r} \$48.15 \\ + \$23.25 \\ \hline \end{array}$	(e) $\begin{array}{r} \$30.05 \\ + \$12.65 \\ \hline \end{array}$	(f) $\begin{array}{r} \$24.80 \\ + \$18.95 \\ \hline \end{array}$

4. Complete the bills.

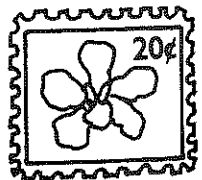
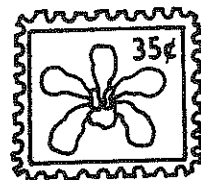
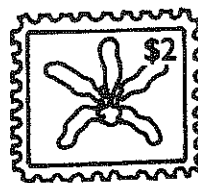
			
Shoes \$12.99	Socks \$2.35	Jeans \$27.85	Basketball \$15.60
			
Racket \$11.20	T-shirt \$5.45	CD-player \$50.50	Pouch \$4.25

(a) 1 CD-player \$ _____ 1 pouch \$ _____ Total \$ _____	(b) 1 pair of shoes \$ _____ 1 pair of socks \$ _____ Total \$ _____
(c) 1 T-shirt \$ _____ 1 pair of jeans \$ _____ Total \$ _____	(d) 1 racket \$ _____ 1 basketball \$ _____ Total \$ _____
(e) 1 pouch \$ _____ 1 CD-player \$ _____ 1 racket \$ _____ Total \$ _____	(f) 1 pair of jeans \$ _____ 1 pair of shoes \$ _____ 1 basketball \$ _____ Total \$ _____

5. Do these. Show all your work clearly.

- (a) Adam saved \$8. He saved \$0.80 less than Lisa.
How much did Lisa save?

- (b) After buying this set of stamps, Jane had \$5.65 left.
How much money did she have at first?



- (c) Sam has \$24.25 in his coin bank.
He puts in another \$30.25.
How much money does he have in his coin bank now?

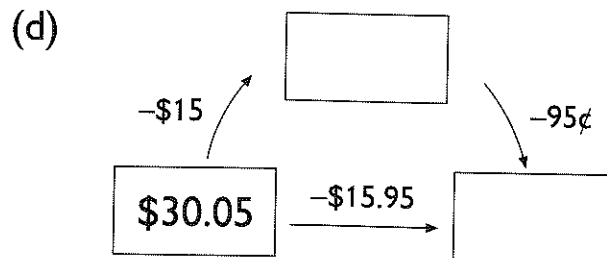
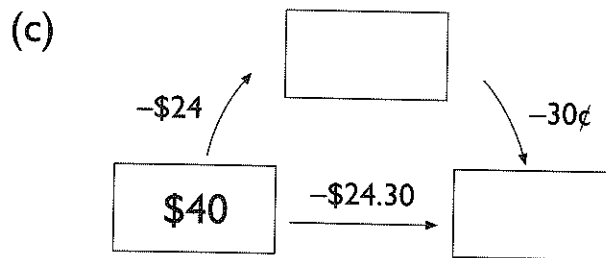
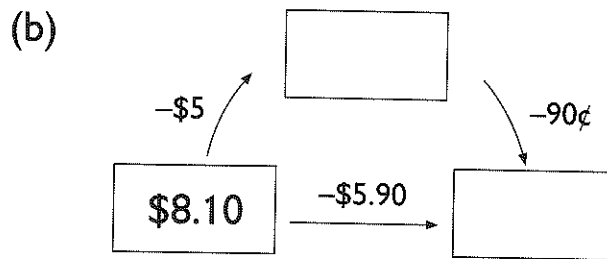
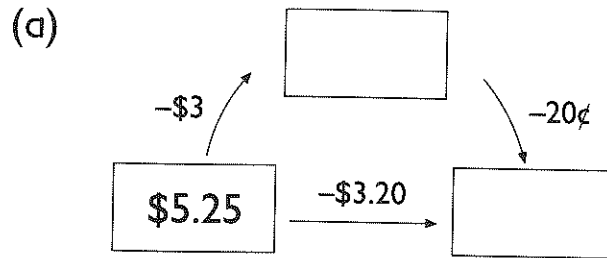
- (d) Tony bought a dictionary and a storybook.
The storybook cost \$4.50.
The dictionary cost \$5.25 more than the storybook.
How much did the dictionary cost?

- (e) Andy has \$16.15. Emily has \$19.36.
How much do they have altogether?

- (f) Mr. Lee gave \$5.00 to David.
John was given \$2.30 more than David.
How much did Mr. Lee give David and
John altogether?

Exercise 3 : Subtraction

1. Write the missing numbers.



2. Subtract.

(a) $\$4 - \$1.50 =$	(b) $\$7 - \$5.30 =$
(c) $\$20 - \$3.40 =$	(d) $\$30 - \$7.75 =$
(e) $\$70 - \$5.25 =$	(f) $\$50 - \$23.80 =$
(g) $\$90 - \$74.10 =$	(h) $\$80 - \$50.55 =$
(i) $\$18.15 - \$0.95 =$	(j) $\$20.05 - \$1.99 =$

3. Subtract.

(a) $\begin{array}{r} \$3.25 \\ - \$0.85 \\ \hline \end{array}$	(b) $\begin{array}{r} \$4.50 \\ - \$3.45 \\ \hline \end{array}$	(c) $\begin{array}{r} \$8.20 \\ - \$6.90 \\ \hline \end{array}$
(d) $\begin{array}{r} \$20.00 \\ - \$16.35 \\ \hline \end{array}$	(e) $\begin{array}{r} \$50.05 \\ - \$27.90 \\ \hline \end{array}$	(f) $\begin{array}{r} \$32.35 \\ - \$29.80 \\ \hline \end{array}$

4. Do these. Show all your work clearly.

- (a) Mr. Ward bought a watermelon.
He gave the shopkeeper \$10.
How much change did he get?



- (b) Jamie has \$9.65.
She wants to buy a dress that costs \$18.50.
How much more money does she need?

- (c) Sean's father gave him \$16.20.
Sean spent \$8.55 on some books.
How much money did he have left?

(d) Bill has \$2.75.

His father gives him \$13.50 more.

Bill then uses the money to buy a dictionary which costs \$14.30.

How much money does Bill have after buying the dictionary?

(e) Sally has two coin banks.

The first coin bank contains \$20.07 and the second one contains \$30.15.

Sally takes \$3.19 from the first coin bank.

How much more money does the second coin bank now contain compared to the first one?

Exercise 4 : Multiplication and Division

1. Find the value of each of the following.

(a) $150¢ \times 5$	(b) $280¢ \times 4$
(c) $\$12.00 \times 3$	(d) $\$33.60 \times 6$

2. Find the value of each of the following.

(a) $320¢ \div 8$	(b) $5400¢ \div 9$
(c) $\$8.40 \div 7$	(d) $\$45.18 \div 9$

3. Do these. Show all your work clearly.

- (a) Lucy spent \$10.80 on a present.
David spent 6 times as much as Lucy on another.
How much money did David spend?

- (b) The total cost of 9 bags is \$77.40.
Each bag costs the same amount of money.
What is the cost of one bag?

Unit 10 : Fractions

Friendly Notes

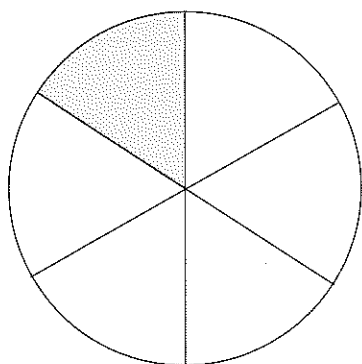
Fraction of a Whole

$$1 \text{ whole} = 2 \text{ halves} = \frac{2}{2}$$

$$1 \text{ whole} = 3 \text{ thirds} = \frac{3}{3}$$

$$1 \text{ whole} = 4 \text{ fourths} = \frac{4}{4}$$

$$1 \text{ whole} = 5 \text{ fifths} = \frac{5}{5}$$



1 out of 6 equal parts is colored.

$\frac{1}{6}$ of the circle is colored.

$\frac{1}{6}$ = one-sixth

1 whole = 6 sixths

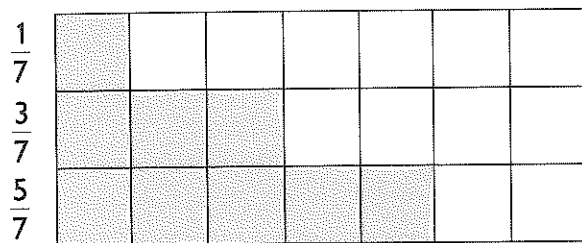
$\frac{1}{6}$ and $\frac{5}{6}$ make one whole.

$\frac{1}{6}$ ← numerator
← denominator



For fractions with a common denominator, the fraction with the greatest numerator is the greatest.

Arrange the fractions in order.
Begin with the smallest.



We compare the size
of the shaded parts.



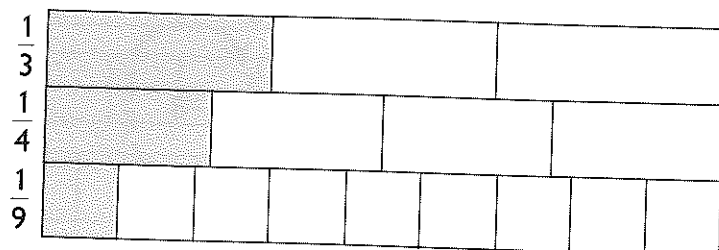
$\frac{5}{7}$ is the greatest.

$\frac{1}{7}$ is the smallest.

Arranging the fractions in order beginning with the
smallest, we have $\frac{1}{7}$, $\frac{3}{7}$, $\frac{5}{7}$.

For fractions with a common numerator, the fraction with the greatest denominator is the smallest.

Arrange the fractions in order.
Begin with the smallest.



We compare the size of the shaded parts.

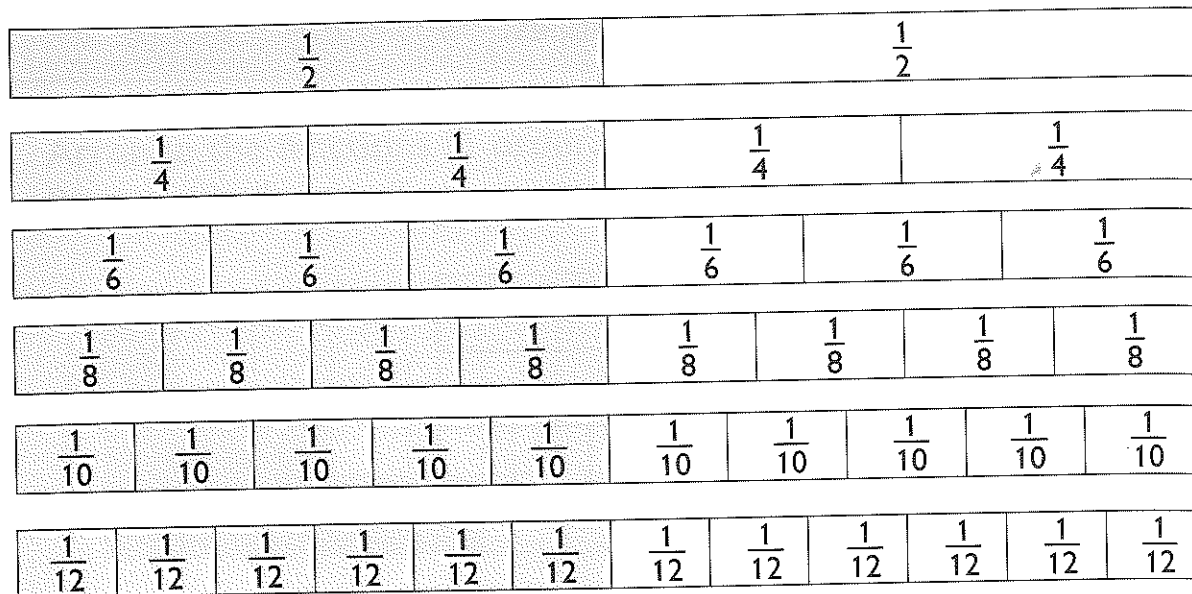


$\frac{1}{3}$ is the greatest.

$\frac{1}{9}$ is the smallest.

Arranging the fractions in order beginning with the smallest, we have $\frac{1}{9}$, $\frac{1}{4}$, $\frac{1}{3}$.

Equivalent Fractions



From the above bars, we can see that the following fractions are equal.

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$$

Equivalent fractions have different numerators and denominators. But they are equal in value.

$\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}, \frac{6}{12}$ are **equivalent fractions**.



To find an equivalent fraction, we can either multiply or divide the numerator and denominator by the same number.

Find an equivalent fraction of $\frac{1}{3}$ and $\frac{6}{10}$.

$$\frac{1}{3} \xrightarrow{\times 3} \frac{3}{9}$$

$$\frac{6}{10} \xrightarrow{\div 2} \frac{3}{5}$$

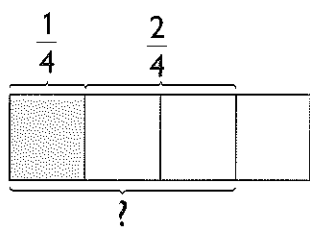
Adding Fractions

We can only add fractions with a common denominator.
We only add the numerators.

Mrs. Lewis drank $\frac{1}{4}$ liter of apple juice on Monday.

She drank $\frac{2}{4}$ liters of apple juice on Tuesday.

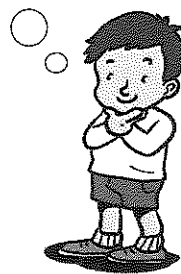
How much apple juice did she drink altogether?



$$1 \text{ fourth} + 2 \text{ fourths} = 3 \text{ fourths}$$

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

She drank $\frac{3}{4}$ ℓ of apple juice altogether.

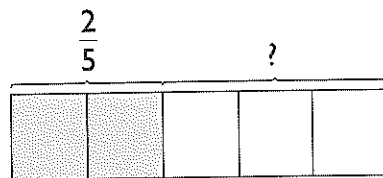


Subtracting Fractions

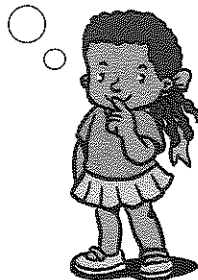
We can only subtract fractions with a common denominator.
We only subtract the numerators.

George gave $\frac{2}{5}$ of his marbles to John.

What fraction of his marbles did he have left?



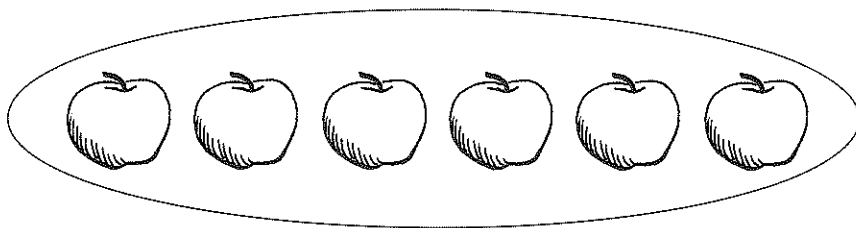
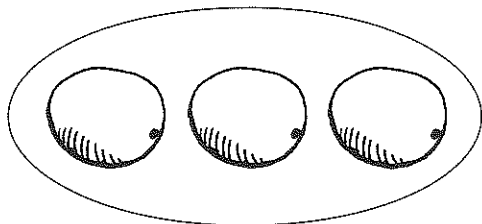
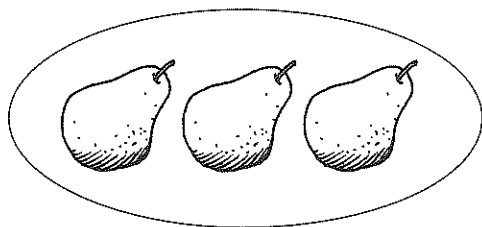
1 whole = 5 fifths
5 fifths - 2 fifths = 3 fifths



$$\frac{5}{5} - \frac{2}{5} = \frac{3}{5}$$

He had $\frac{3}{5}$ of his marbles left.

Fraction of a Set



3 out of 12 fruits are pears.

$\frac{3}{12}$ of the fruits are pears.

$$\frac{3}{12} = \frac{1}{4}$$

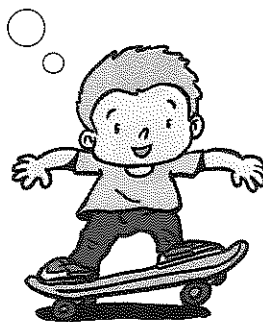
$$\frac{6}{12} = \frac{1}{2}$$

3 out of 12 fruits are mangoes.

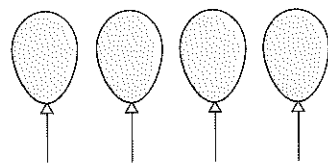
$\frac{3}{12}$ of the fruits are mangoes.

6 out of 12 fruits are apples.

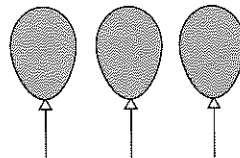
$\frac{6}{12}$ of the fruits are apples.



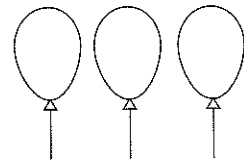
- There are 10 balloons.
3 of these balloons are red.
4 of these balloons are green.
The remaining balloons are white.
What fraction of the balloons are white?



green balloons



red balloons

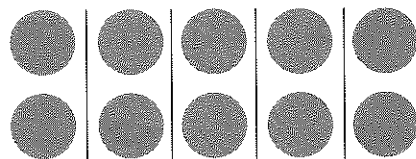


white balloons

$$10 - 3 - 4 = 3$$

$\frac{3}{10}$ of the balloons are white.

- What is $\frac{1}{5}$ of 10?



$$\frac{1}{5} \text{ of } 10 = 2$$

$\frac{1}{5}$ —→ 1 part out of
 $\frac{1}{5}$ —→ 5 equal parts

Divide 10 into 5 equal groups.

One group is $\frac{1}{5}$ of 10.



Fractions and Money

10 dimes make a dollar.

100 pennies make a dollar.

4 quarters also make a dollar.

1 dime = $\frac{1}{10}$ of a dollar

1 penny = $\frac{1}{100}$ of a dollar

1 quarter = $\frac{1}{4}$ of a dollar



dime



penny



quarter



half-dollar



nickel



a dollar note

1. What fraction of a dollar is 6 dimes?

$$\frac{6}{10} = \frac{3}{5}$$

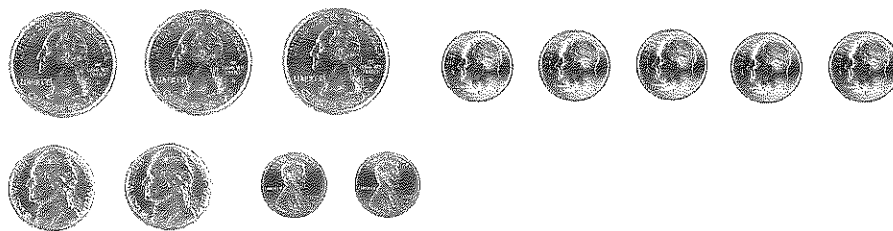
6 dimes is $\frac{3}{5}$ of a dollar.

A dollar = 10 dimes

6 dimes out of 10 dimes = $\frac{6}{10}$



2. Leila has 3 quarters, 5 dimes, 2 nickels and 2 pennies.



- (a) What fraction of her coins are quarters?
- (b) What fraction of her coins are nickels?
- (c) What fraction of her coins are dimes?

There are 12 coins altogether.

(a) $\frac{3}{12} = \frac{1}{4}$

$\frac{1}{4}$ of her coins are quarters.

(b) $\frac{2}{12} = \frac{1}{6}$

$\frac{1}{6}$ of her coins are nickels.

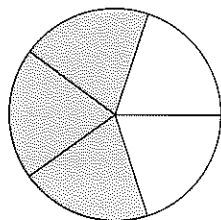
- (c) 5 out of 12 coins are dimes.

$\frac{5}{12}$ of her coins are dimes.

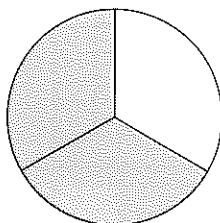
Exercise 1A : Fraction of a Whole

1. Match the circles to the correct fractions.

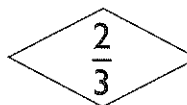
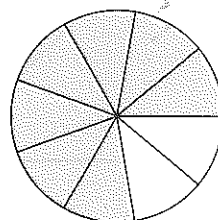
(a)



(b)



(c)



$\frac{1}{4}$

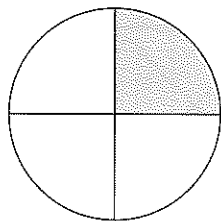
$\frac{3}{5}$

$\frac{5}{6}$

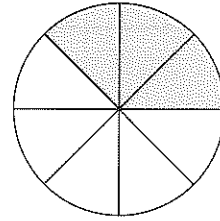
$\frac{3}{8}$

$\frac{7}{9}$

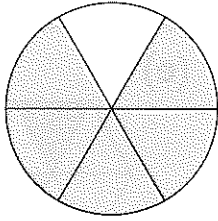
(d)



(e)

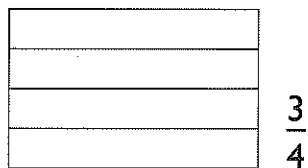


(f)



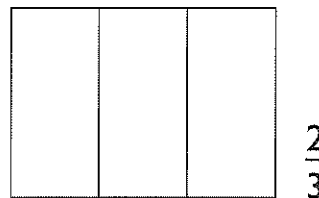
2. Color each figure to show the given fraction.

(a)



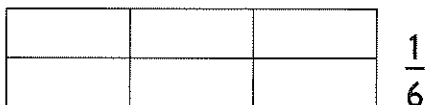
$\frac{3}{4}$

(b)



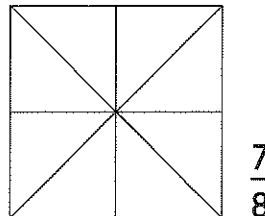
$\frac{2}{3}$

(c)



$\frac{1}{6}$

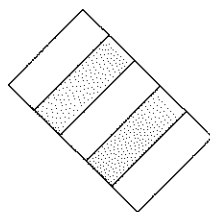
(d)



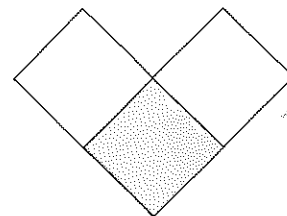
$\frac{7}{8}$

3. What fraction of the shape is shaded?

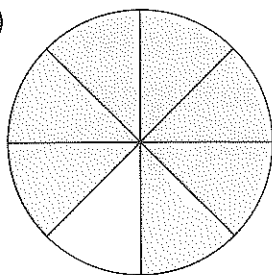
(a)



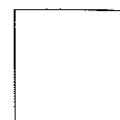
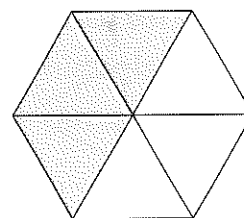
(b)



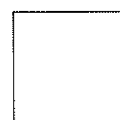
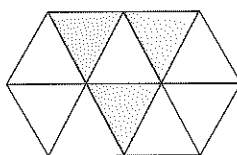
(c)



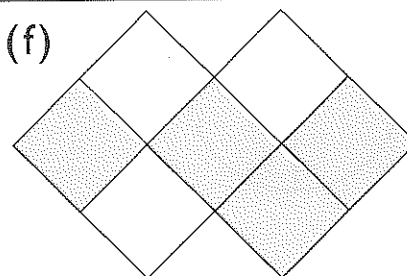
(d)



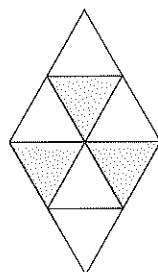
(e)



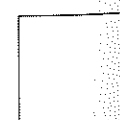
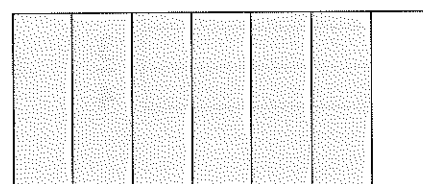
(f)



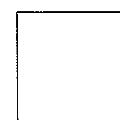
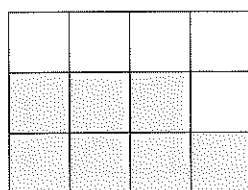
(g)



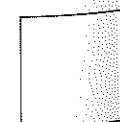
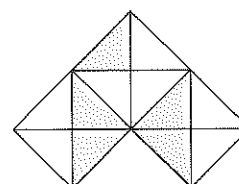
(h)



(i)



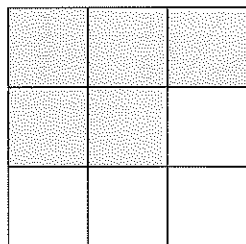
(j)



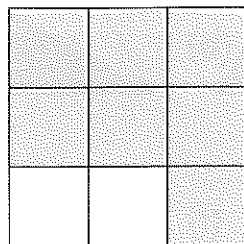
Exercise 1B : Fraction of a Whole

1. Circle the greater fraction.

(a)

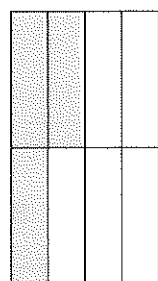


$$\frac{5}{9}$$

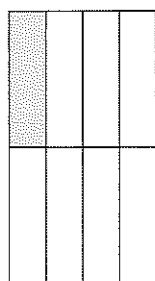


$$\frac{7}{9}$$

(b)

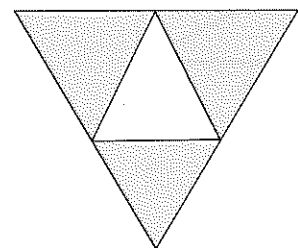


$$\frac{3}{8}$$

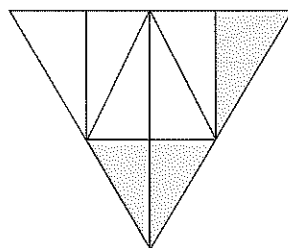


$$\frac{1}{8}$$

(c)

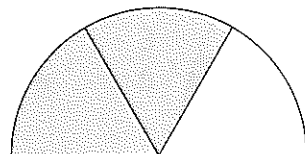


$$\frac{3}{4}$$

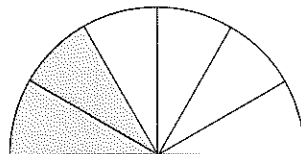


$$\frac{3}{8}$$

(d)



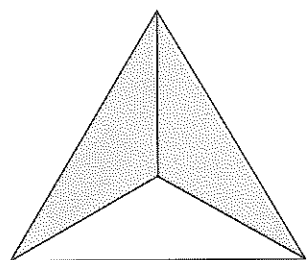
$$\frac{2}{3}$$



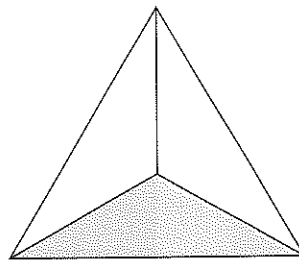
$$\frac{2}{6}$$

2. Circle the smaller fraction.

(a)

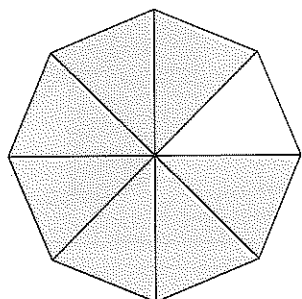


$$\frac{2}{3}$$

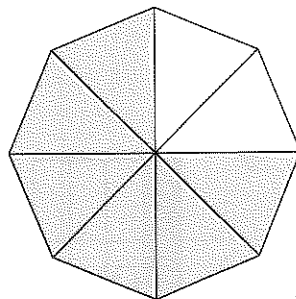


$$\frac{1}{3}$$

(b)

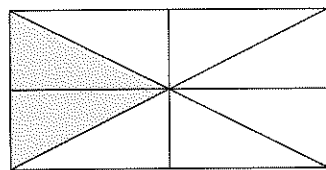


$$\frac{7}{8}$$

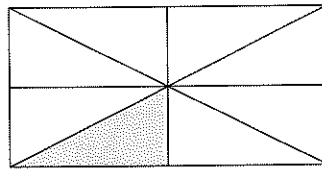


$$\frac{6}{8}$$

(c)

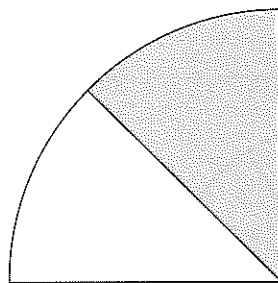


$$\frac{2}{8}$$

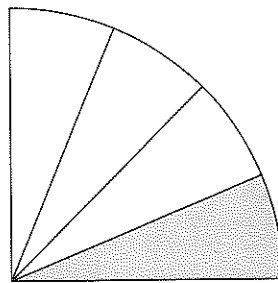


$$\frac{1}{8}$$

(d)



$$\frac{1}{2}$$



$$\frac{1}{4}$$

3. Circle the greatest fraction.

(a) $\frac{1}{5}$, $\frac{1}{3}$, $\frac{1}{8}$

(b) $\frac{7}{8}$, $\frac{7}{10}$, $\frac{7}{9}$

(c) $\frac{3}{7}$, $\frac{3}{6}$, $\frac{3}{5}$

(d) $\frac{1}{12}$, $\frac{1}{10}$, $\frac{1}{8}$

(e) $\frac{3}{6}$, $\frac{5}{6}$, $\frac{1}{6}$

(f) $\frac{10}{12}$, $\frac{9}{12}$, $\frac{8}{12}$

(g) $\frac{6}{7}$, $\frac{5}{7}$, $\frac{3}{7}$

(h) $\frac{2}{9}$, $\frac{5}{9}$, $\frac{8}{9}$

4. Circle the smallest fraction.

(a) $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$

(b) $\frac{1}{6}$, $\frac{1}{5}$, $\frac{1}{9}$

(c) $\frac{2}{8}$, $\frac{2}{6}$, $\frac{2}{3}$

(d) $\frac{5}{9}$, $\frac{5}{12}$, $\frac{5}{10}$

(e) $\frac{3}{5}$, $\frac{4}{5}$, $\frac{2}{5}$

(f) $\frac{9}{10}$, $\frac{7}{10}$, $\frac{6}{10}$

(g) $\frac{4}{6}$, $\frac{3}{6}$, $\frac{5}{6}$

(h) $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$

5. Arrange the numbers in order, beginning with the greatest.

(a) $\frac{1}{7}$, $\frac{1}{6}$, $\frac{1}{5}$ _____

(b) $\frac{4}{12}$, $\frac{4}{5}$, $\frac{4}{7}$ _____

(c) 1 , $\frac{2}{3}$, $\frac{1}{3}$ _____

(d) $\frac{1}{8}$, $\frac{7}{8}$, $\frac{5}{8}$ _____

(e) $\frac{3}{5}$, $\frac{3}{4}$, $\frac{3}{7}$ _____

6. Arrange the numbers in order, beginning with the smallest.

(a) $\frac{1}{5}$, 1 , $\frac{1}{7}$ _____

(b) $\frac{5}{9}$, $\frac{5}{6}$, $\frac{5}{7}$ _____

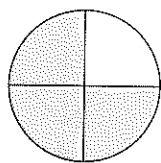
(c) $\frac{3}{5}$, $\frac{4}{5}$, $\frac{2}{5}$ _____

(d) $\frac{9}{12}$, $\frac{5}{12}$, $\frac{10}{12}$ _____

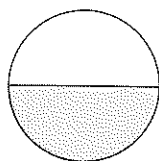
(e) $\frac{2}{7}$, $\frac{2}{9}$, $\frac{2}{3}$ _____

Exercise 2 : Equivalent Fractions

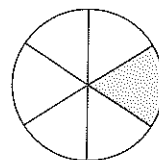
1. Match each pair of equivalent fractions.



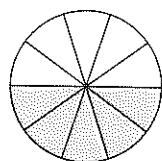
$\frac{3}{4}$



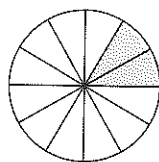
$\frac{1}{2}$



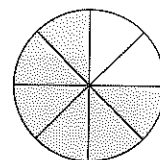
$\frac{1}{6}$



$\frac{5}{10}$



$\frac{2}{12}$



$\frac{6}{8}$

2. Write the missing numerators.

$\frac{\quad}{2}$	$\frac{1}{2}$
-------------------	---------------

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
---------------	---------------	---------------

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$
---------------	---------------	---------------	---------------	---------------	---------------

$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$
----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------

(a) $\frac{1}{2} = \frac{\square}{6}$

(b) $\frac{2}{3} = \frac{\square}{12}$

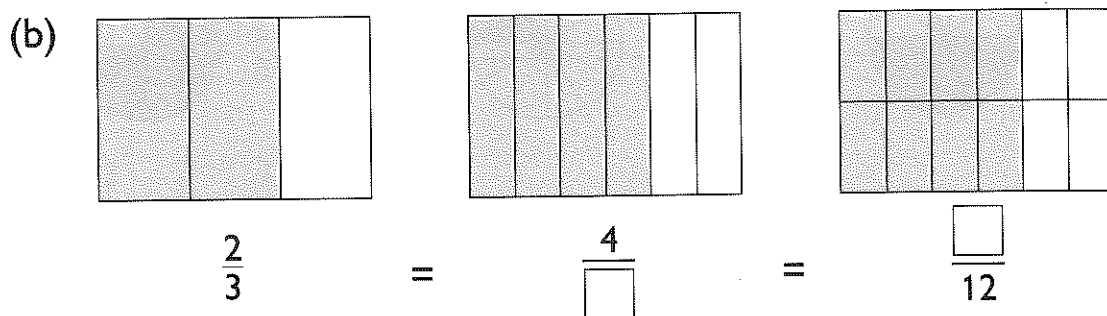
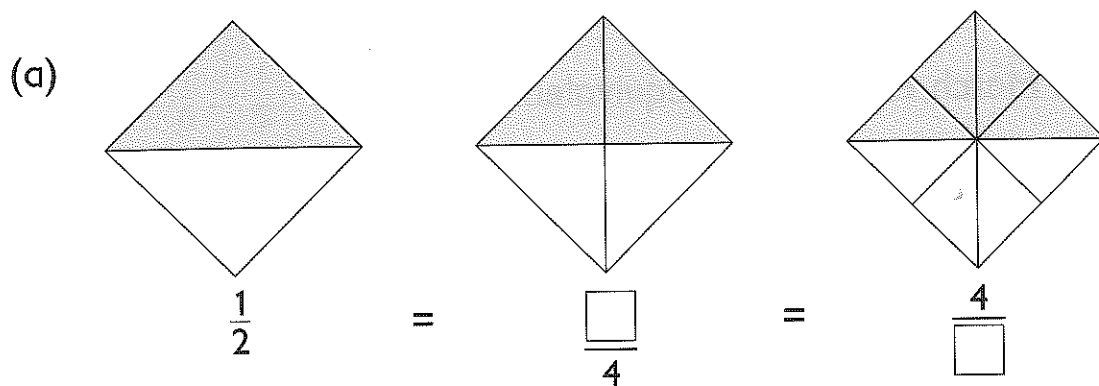
(c) $\frac{3}{6} = \frac{\square}{2}$

(d) $\frac{2}{12} = \frac{\square}{6}$

(e) $\frac{8}{12} = \frac{\square}{6}$

(f) $\frac{5}{6} = \frac{\square}{12}$

3. Write the missing numerators and denominators.



4. Write the missing numerators and denominators.

(a) $\frac{3}{4} \xrightarrow{\times 3} \frac{\square}{\square} \xleftarrow{\times 3}$

(b) $\frac{5}{6} \xrightarrow{\times 2} \frac{\square}{\square} \xleftarrow{\times 2}$

(c) $\frac{2}{3} \xrightarrow{\times 4} \frac{\square}{\square} \xleftarrow{\times 4}$

(d) $\frac{1}{2} \xrightarrow{\times 5} \frac{\square}{\square} \xleftarrow{\times 5}$

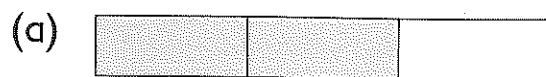
(e) $\frac{6}{8} \xrightarrow{\div 2} \frac{\square}{\square} \xleftarrow{\div 2}$

(f) $\frac{3}{9} \xrightarrow{\div 3} \frac{\square}{\square} \xleftarrow{\div 3}$

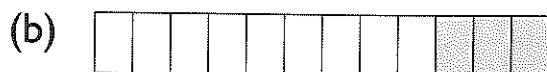
(g) $\frac{6}{12} \xrightarrow{\div 6} \frac{\square}{\square} \xleftarrow{\div 6}$

(h) $\frac{4}{12} \xrightarrow{\div 4} \frac{\square}{\square} \xleftarrow{\div 4}$

5. Write the equivalent fraction for each of the following.

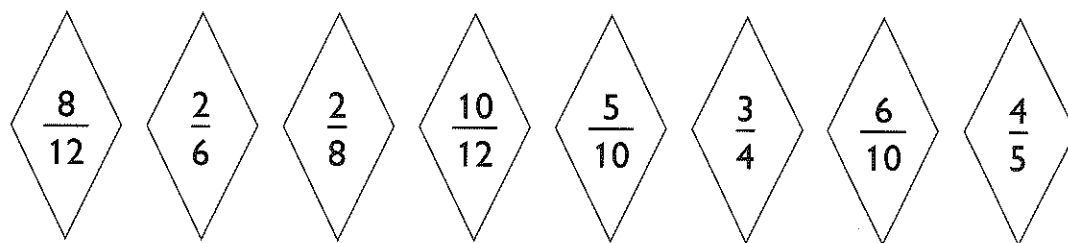
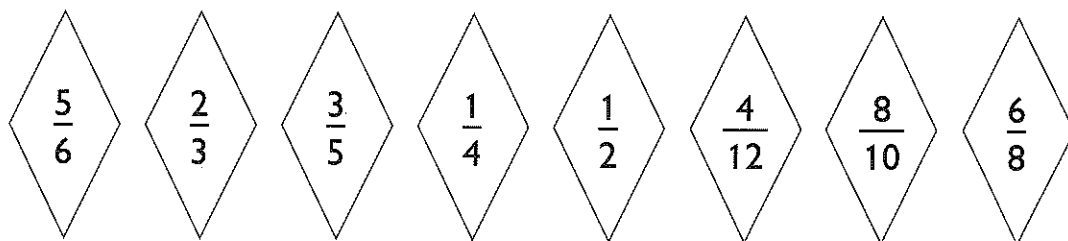


$$\frac{2}{3} =$$



$$\frac{3}{12} =$$

6. Join the equivalent fractions.



7. Write the simplest equivalent fraction for each fraction.

(a) $\frac{2}{4} =$

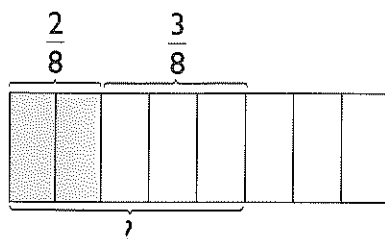
(b) $\frac{4}{6} =$

(c) $\frac{8}{10} =$

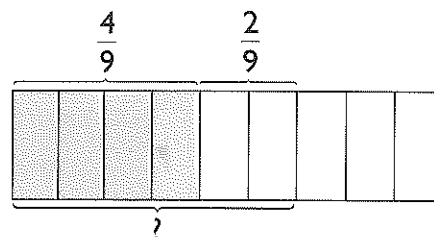
Exercise 3 : Adding Fractions

1. Add.

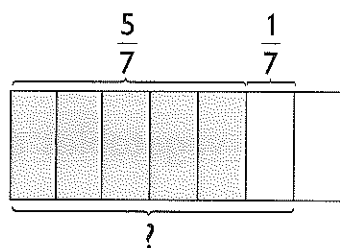
(a) $\frac{2}{8} + \frac{3}{8} =$



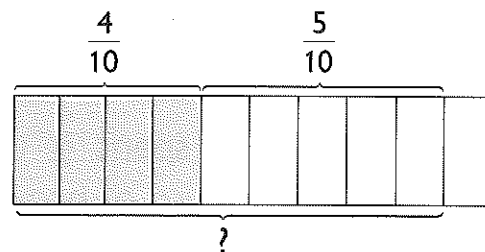
(b) $\frac{4}{9} + \frac{2}{9} =$



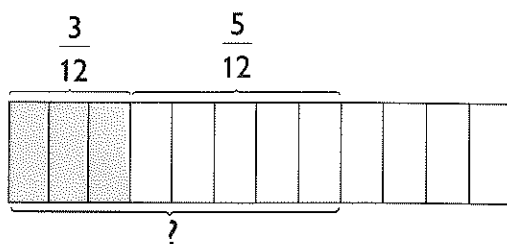
(c) $\frac{5}{7} + \frac{1}{7} =$



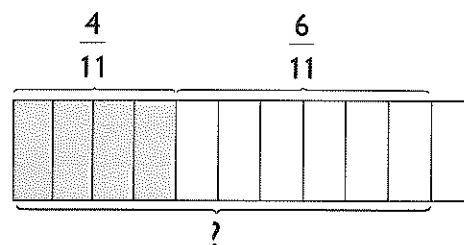
(d) $\frac{4}{10} + \frac{5}{10} =$



(e) $\frac{3}{12} + \frac{5}{12} =$



(f) $\frac{4}{11} + \frac{6}{11} =$



2. Do these. Show all your work clearly.

(a) Josh ate $\frac{2}{6}$ of a pizza.

Mary ate $\frac{3}{6}$ of the same pizza.

What fraction of the pizza did they eat altogether?

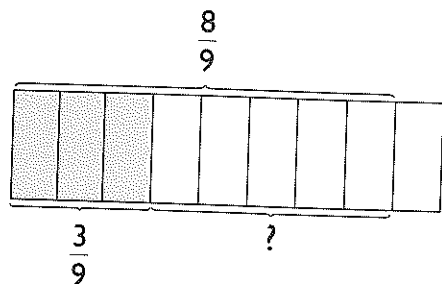
(b) Mrs. Li spent $\frac{4}{9}$ of her money on vegetables and $\frac{3}{9}$ of it on 2 kg of prawns.

What fraction of her money did she spend altogether?

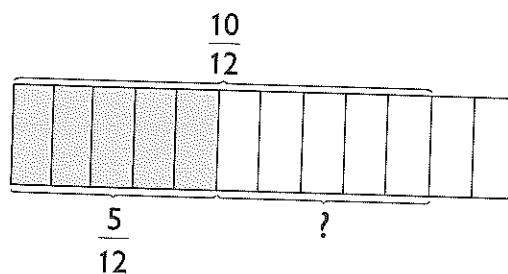
Exercise 4 : Subtracting Fractions

1. Subtract.

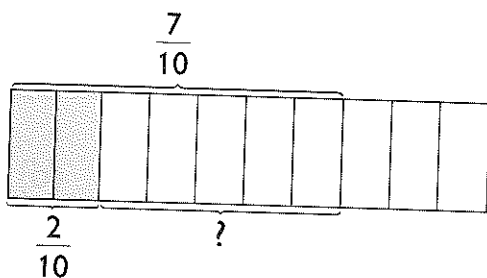
(a) $\frac{8}{9} - \frac{3}{9} =$



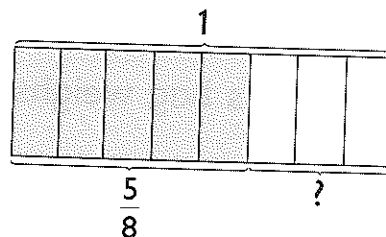
(b) $\frac{10}{12} - \frac{5}{12} =$



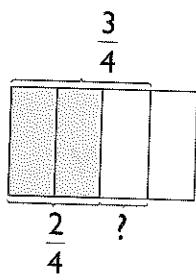
(c) $\frac{7}{10} - \frac{2}{10} =$



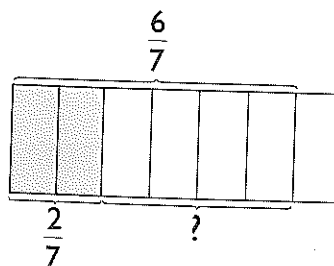
(d) $1 - \frac{5}{8} =$



(e) $\frac{3}{4} - \frac{2}{4} =$



(f) $\frac{6}{7} - \frac{2}{7} =$



2. Do these. Show all your work clearly.

(a) Cloth A is $\frac{8}{12}$ yd long.

Cloth B is $\frac{5}{12}$ yd long.

How much longer is Cloth A than Cloth B?

(b) Diane's bag weighs $\frac{9}{10}$ kg.

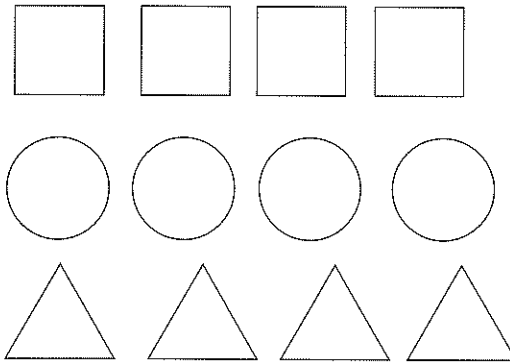
George's bag weighs $\frac{3}{10}$ kg.

How much lighter is George's bag than Diane's bag?

Exercise 5 : Fraction of a Set

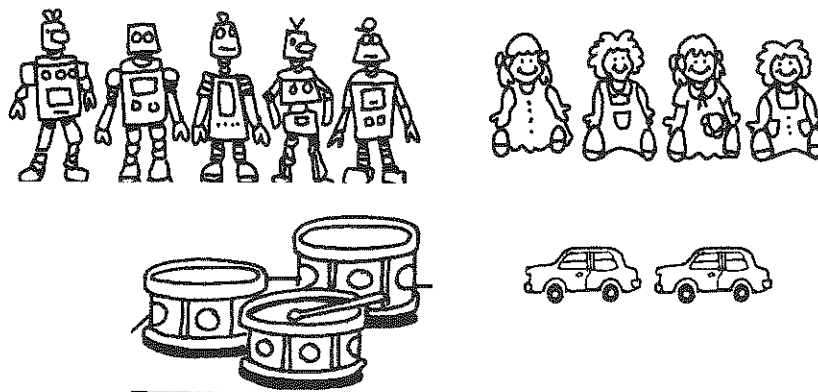
1. Fill in the blanks.

(a)



What fraction of the shapes are triangles?

(b)



What fraction of the toys are toy cars?

2. Fill in the blanks.

(a) Find $\frac{2}{10}$ of 30.

(b) Find $\frac{3}{8}$ of 64.

(c) Find $\frac{5}{9}$ of 81.

(d) What is $\frac{2}{7}$ of 63?

(e) What is $\frac{7}{12}$ of 144?

(f) What is $\frac{5}{6}$ of 120?

Exercise 6 : Fractions and Money

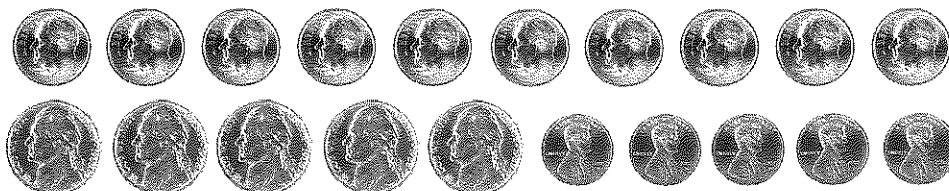
1. Fill in the blanks.

(a) What fraction of a dollar is 80 pennies?

(b) What fraction of a dollar is 6 dimes?

(c) What fraction of a dollar is 3 quarters?

2. Fill in the missing numbers.



(a) $\frac{\square}{\square}$ of the coins are nickels.

(b) $\frac{\square}{\square}$ of the coins are dimes.

3. Write each amount of money as a fraction of a dollar.

(a) \$0.35

$$= \frac{\square}{\square}$$

(b) \$0.80

$$= \frac{\square}{\square}$$

4. Do this. Show your working clearly.



\$2



\$4



\$2

Danny had \$10. He bought a doll, a toy aeroplane and a toy car.

(a) What fraction of his money was spent on the doll?

(b) What fraction of his money was not spent?

Unit 11 : Time

Friendly Notes

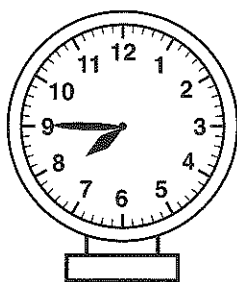
Hours and Minutes

The hour (h) and minute (min) are units of time.

$$1 \text{ h} = 60 \text{ min}$$

a.m. means after 12:00 midnight and before 12:00 noon.

p.m. means after 12:00 noon and before 12:00 midnight.

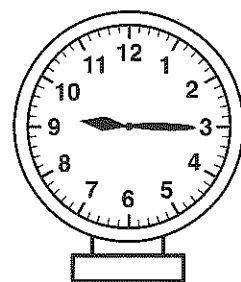


7:45

We read 7:45 as seven forty-five.

7:45 is 15 minutes before 8 o'clock.

It is fifteen minutes to eight.

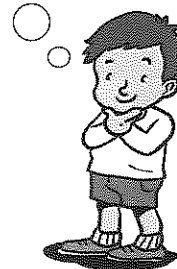


9:15

We read 9:15 as nine fifteen.

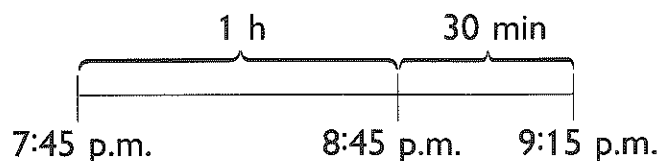
9:15 is 15 minutes past 9 o'clock.

It is fifteen minutes past nine.



1. Kenny started doing his homework at 7:45 p.m.
He finished doing it at 9:15 p.m.
How many minutes did he take to complete his homework?

$$1 \text{ h} = 60 \text{ min}$$

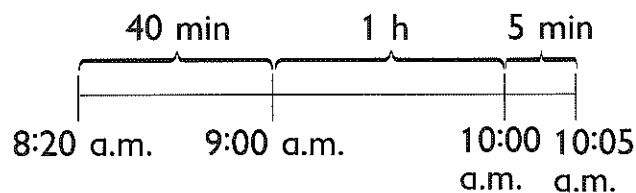


He took 1 h 30 min to complete his homework.

$$\begin{aligned} 1 \text{ h } 30 \text{ min} &= 60 \text{ min} + 30 \text{ min} \\ &= 90 \text{ min} \end{aligned}$$

He took 90 min to complete his homework.

2. Philip started swimming at 8:20 a.m.
He swam for 1 h 45 min.
What time did he stop swimming?



He stopped swimming at 10:05 a.m.

Other Units of Time

The second (s) is another unit of time.

$$1 \text{ min} = 60 \text{ s}$$

The year, month, week and day are other units of time.

$$1 \text{ year} = 12 \text{ months}$$

$$1 \text{ week} = 7 \text{ days}$$

1. (a) Write 8 min 30 s in seconds.

$$\begin{array}{rcl} 8 \text{ min} & 30 \text{ s} & \\ / & \backslash & \\ 8 \text{ min} & 30 \text{ s} & \\ 8 \text{ min} = 480 \text{ s} & & \end{array}$$

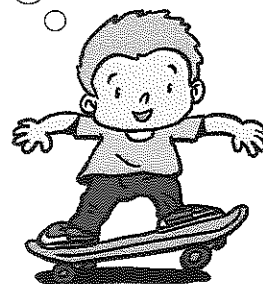
$$8 \text{ min } 30 \text{ s} = 510 \text{ s}$$



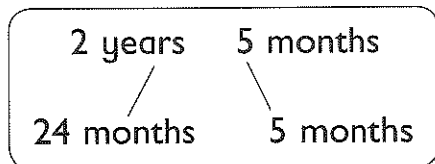
- (b) Write 125 s in minutes and seconds.

$$\begin{array}{rcl} 125 \text{ s} & & \\ / & \backslash & \\ 120 \text{ s} & 5 \text{ s} & \\ 120 \text{ s} = 2 \text{ min} & & \end{array}$$

$$125 \text{ s} = 2 \text{ min } 5 \text{ s}$$



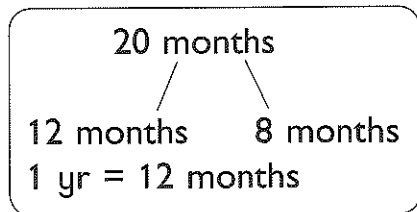
2. (a) Write 2 years 5 months in months.



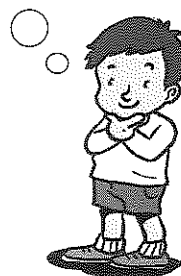
$$2 \text{ years } 5 \text{ months} = 29 \text{ months}$$



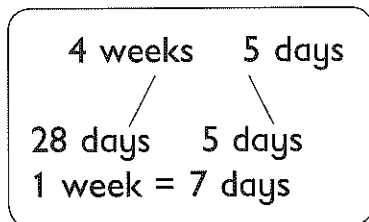
- (b) Write 20 months in years and months.



$$20 \text{ months} = 1 \text{ year } 8 \text{ months}$$



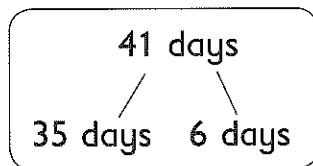
3. (a) Write 4 weeks 5 days in days.



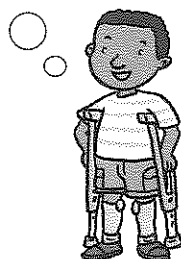
$$4 \text{ weeks } 5 \text{ days} = 33 \text{ days}$$



- (b) Write 41 days in weeks and days.



$$41 \text{ days} = 5 \text{ weeks } 6 \text{ days}$$



Exercise 1A : Hours and Minutes

1. Fill in the blanks.

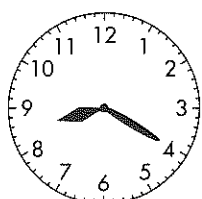
(a)



_____ minutes after _____ o'clock.

_____ minutes past _____.

(b)



_____ minutes after _____ o'clock.

_____ minutes past _____.

(c)



_____ minutes before _____ o'clock.

_____ minutes to _____.

(d)

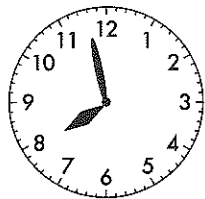


_____ minutes before _____ o'clock.

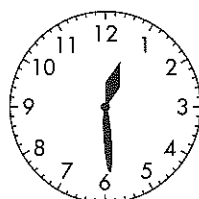
_____ minutes to _____.

2. What time is it?

(a)



(b)



(c)



(d)



(e)



(f)



3. Write the time using 'a.m.' or 'p.m.'.

(a) 2 h 30 min after midnight is _____.

(b) 3 h 40 min before midnight is _____.

(c) 4 h 15 min after noon is _____.

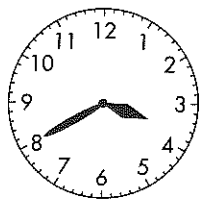
(d) 7 h 45 min before noon is _____.

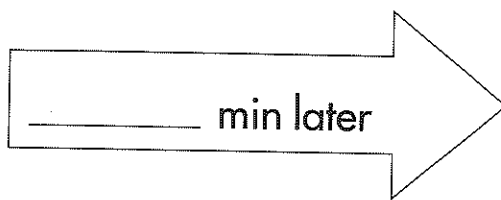
(e) 10 h before midnight is _____.

(f) 1 h 50 min after noon is _____.

Complete the following.

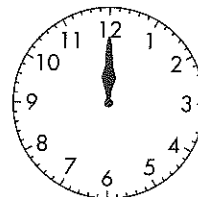
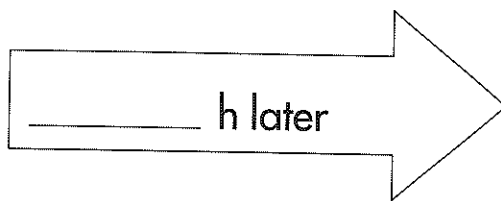
(a)





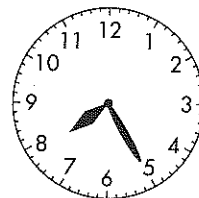
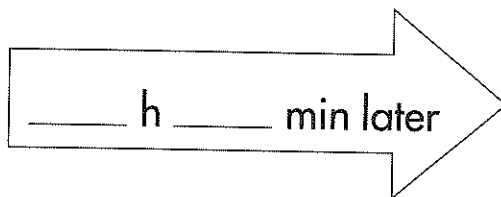
(b)



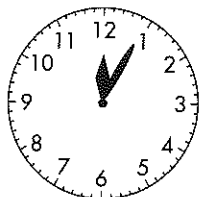


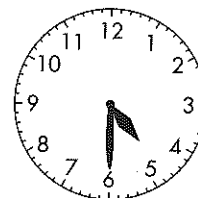
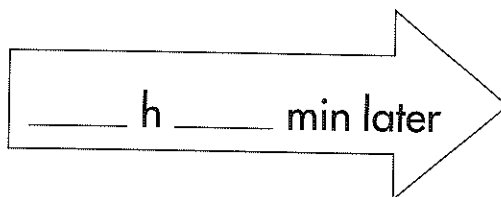
(c)





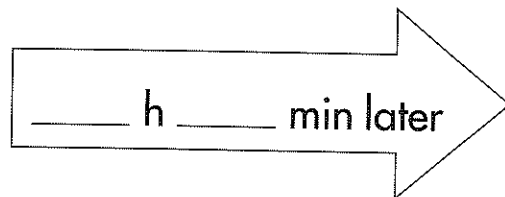
(d)





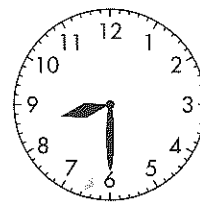
(e)



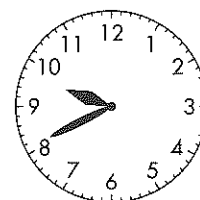


5. Fill in the blanks.

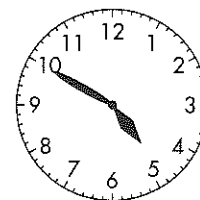
- (a) The time is 8:30 a.m.
35 minutes later, it will be _____.



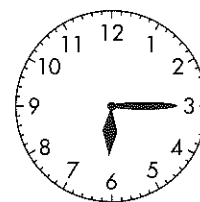
- (b) The time is 9:40 p.m.
40 minutes later, it will be _____.



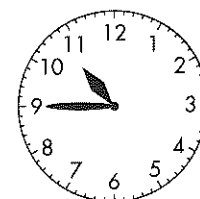
- (c) The time is 4:50 p.m.
20 minutes later, it will be _____.



- (d) The time is 6:15 p.m.
2 hours 30 minutes later,
it will be _____.



- (e) The time is 10:45 p.m.
1 hour 25 minutes later,
it will be _____.



Exercise 1B : Hours and Minutes

1. Do these. Show your work clearly.

- (a) A television program started at 6:45 p.m. and lasted 35 minutes.

What time did the program end?

The program ended at _____.

- (b) Ryan went to bed at 11:00 p.m.

He woke up at 6:30 a.m.

For how long did he sleep?

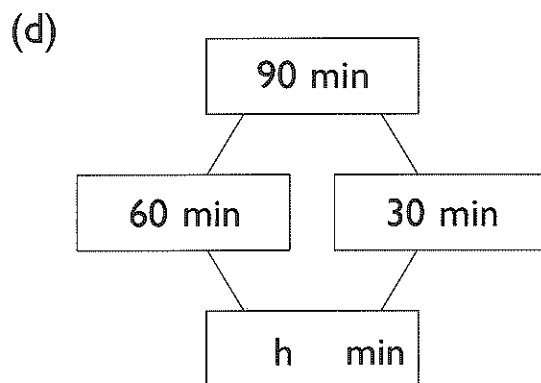
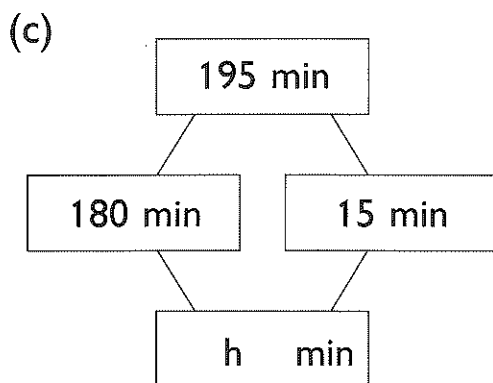
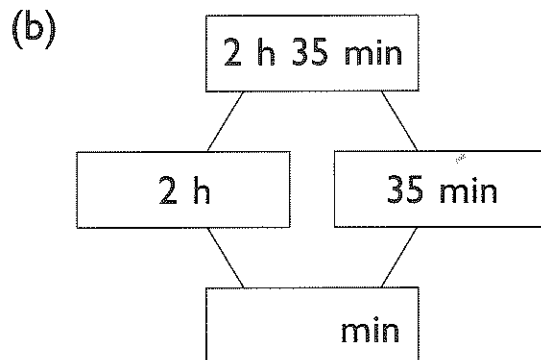
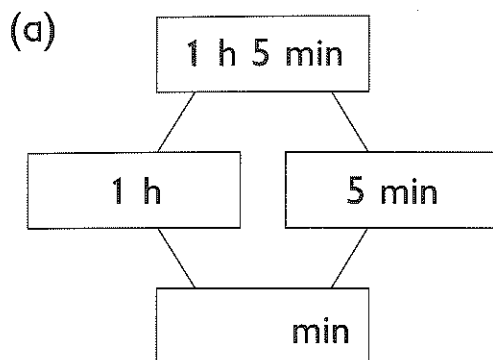
He slept for _____.

- (c) A bank opens from 8:30 a.m. to 4:30 p.m. every day.

How many hours a day is the bank open?

The bank is open _____ hours a day.

2. Write the missing numbers.



3. Fill in the blanks.

- (a) 1 h 40 min = _____ min
- (b) 2 h 55 min = _____ min
- (c) 3 h 25 min = _____ min
- (d) 4 h 5 min = _____ min
- (e) 95 min = _____ h _____ min
- (f) 110 min = _____ h _____ min
- (g) 135 min = _____ h _____ min
- (h) 285 min = _____ h _____ min

4. Add.

(a) $1 \text{ h } 10 \text{ min} + 25 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(b) $2 \text{ h } 35 \text{ min} + 15 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(c) $1 \text{ h } 5 \text{ min} + 1 \text{ h } 30 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(d) $2 \text{ h } 40 \text{ min} + 2 \text{ h } 25 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(e) $3 \text{ h } 25 \text{ min} + 1 \text{ h } 35 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

5. Subtract.

(a) $1 \text{ h } 35 \text{ min} - 15 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(b) $2 \text{ h } 10 \text{ min} - 20 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(c) $2 \text{ h } 45 \text{ min} - 1 \text{ h } 5 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(d) $3 \text{ h } 20 \text{ min} - 1 \text{ h } 55 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

(e) $4 \text{ h } 40 \text{ min} - 2 \text{ h } 45 \text{ min} = \underline{\hspace{2cm}} \text{ h } \underline{\hspace{2cm}} \text{ min}$

6. Do these. Show all your work clearly.

- (a) Ashley started cleaning her house at 8:15 a.m.
She cleaned for 2 hours and 30 minutes.
What time did she finish cleaning her house?

- (b) Emily spent 1 hour 20 minutes doing her Mathematics homework and 1 hour 55 minutes doing her English homework.
How much time did she spend doing all her homework?

- (c) Mrs. Coles took 1 hour 15 minutes to drive from her house to the airport.
Mrs. Ray took 55 minutes to drive the same route.
Who took a shorter time?
How much shorter?

- (d) A track meet started at 1:45 p.m. and ended at 4:35 p.m.
How long did the track meet last?

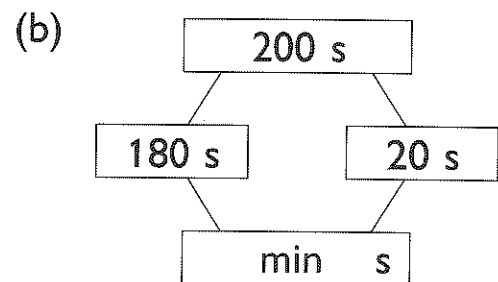
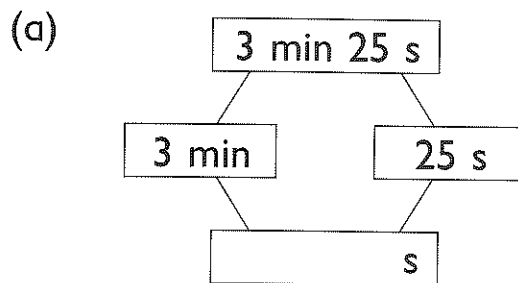
Exercise 2 : Other Units of Time

1. Write the missing numbers.

(a) 52 seconds $+$ _____ seconds \rightarrow 1 minute

(b) 1 minute $-$ _____ seconds \rightarrow 41 seconds

2. Write the missing numbers.



3. Fill in the blanks.

(a) 1 min 25 s = _____ s

(b) 2 min 35 s = _____ s

(c) 3 min 10 s = _____ s

(d) 115 s = _____ min _____ s

(e) 165 s = _____ min _____ s

(f) 240 s = _____ min _____ s

4. Match.

(a) 2 years 4 months

(b) 1 year 10 months

22 months

28 months

37 months

33 months

(c) 2 years 9 months

(d) 3 years 1 month

5. Fill in the blanks.

(a) 2 years 11 months = _____ months

(b) 28 months = _____ years _____ months

6. Match.

(a) 3 weeks 3 days

(b) 2 weeks 1 day

15 days

24 days

11 days

26 days

(c) 1 week 4 days

(d) 3 weeks 5 days

7. Fill in the blanks.

(a) 2 weeks 6 days = _____ days

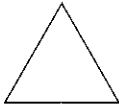

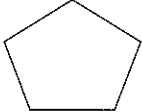

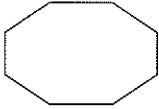
(b) 22 days = _____ weeks _____ day

Unit 12 : Geometry

Friendly Notes

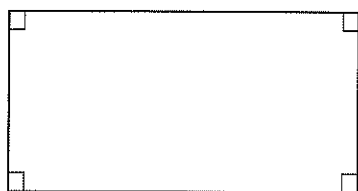
Angles

A polygon is a closed figure with straight sides. So, a circle is not a polygon. Any two sides of a polygon form an angle. A polygon has as many sides as angles.

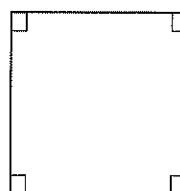
Polygon	Number of sides	Number of angles
triangle 	3	3
quadrilateral 	4	4
pentagon 	5	5
hexagon 	6	6
octagon 	8	8

Right Angles

A rectangle and a square have 4 right angles each.

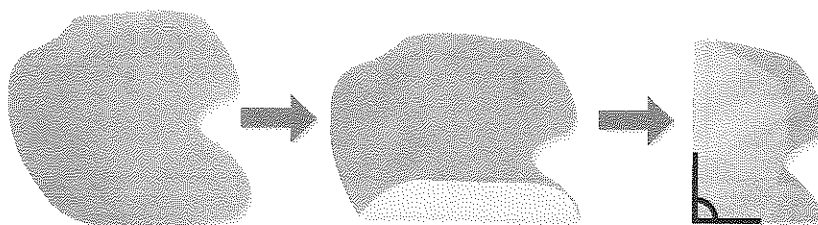


Rectangle

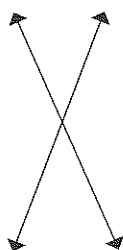


Square

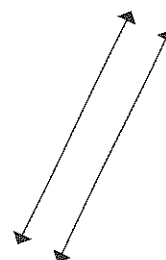
We can make a right angle by folding a piece of paper twice as shown below:



Quadrilaterals and Triangles



These lines intersect.



These lines are parallel.
They will never intersect.

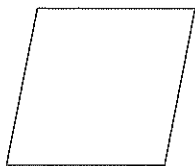
A quadrilateral is a polygon with 4 sides.

A **parallelogram** is a quadrilateral that has pairs of sides that are parallel.



parallelogram

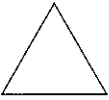
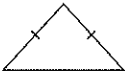
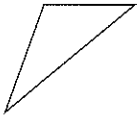
A **rhombus** is a parallelogram with 4 equal sides.



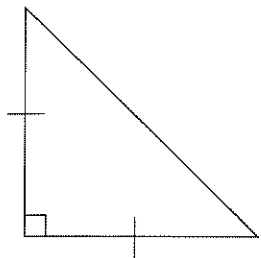
rhombus

A **triangle** does not have parallel sides.

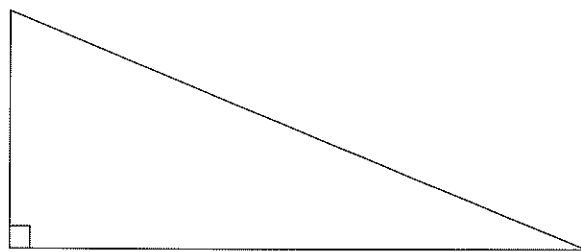
We name triangles as follows:

Triangle	Number of equal sides	Number of equal angles
equilateral 	3	3
isosceles 	2	2
scalene 	0	0

A **right triangle** is a triangle with a right angle.
A triangle cannot have 2 right angles.
A right triangle can be scalene or isosceles.



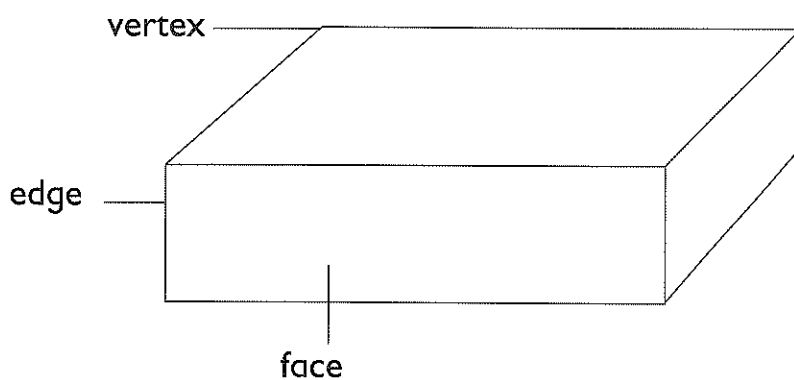
Isosceles right triangle



Scalene right triangle

Solid Figures

Solid figures have faces, edges and vertices.



A rectangular prism has 6 faces, 12 edges and 8 vertices.

Exercise 1 : Angles

1. Complete the table below.

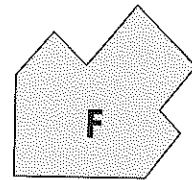
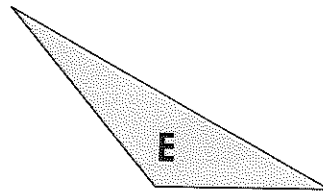
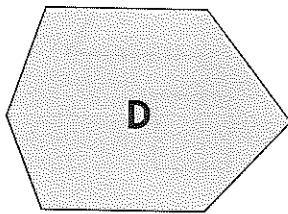
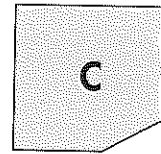
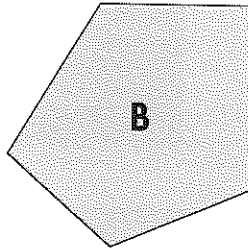
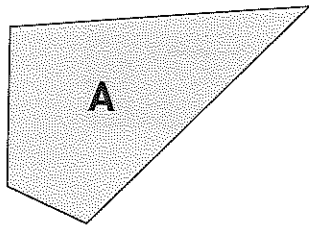
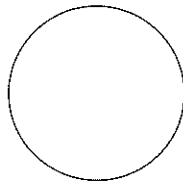


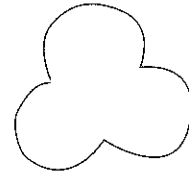
	Figure	Number of sides	Number of angles
(a)	A		
(b)	B		
(c)	C		
(d)	D		
(e)	E		
(f)	F		

2. Check (✓) the box below the figure if it is a polygon.

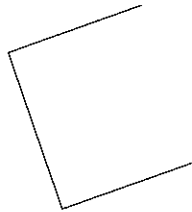
(a)



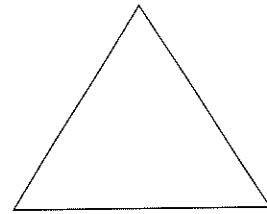
(b)



(c)



(d)



3. Fill in the blanks.

How many angles and sides does each of these polygons have?

(a) quadrilateral

_____ angles

_____ sides

(b) octagon

_____ sides

_____ angles

Exercise 2 : Right Angles

1. Complete the table below.

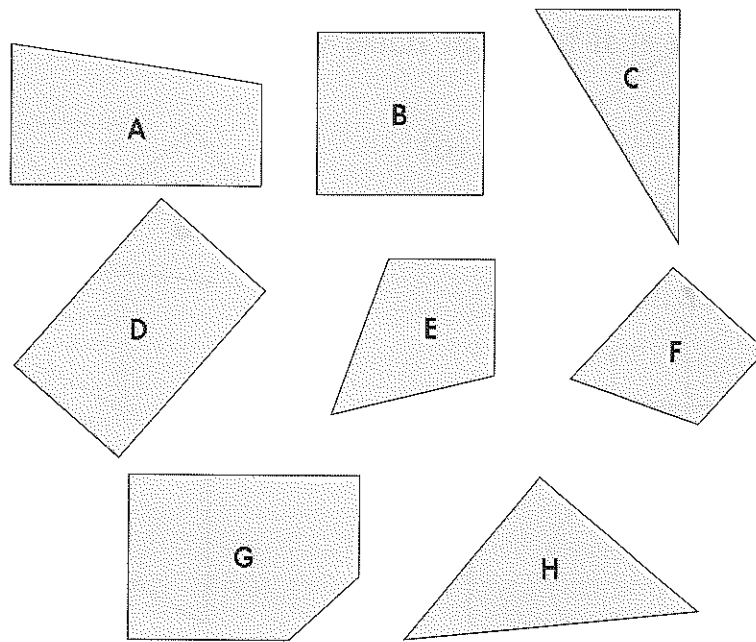
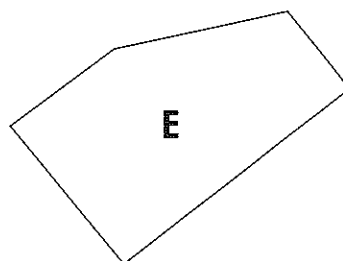
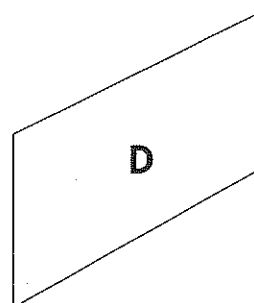
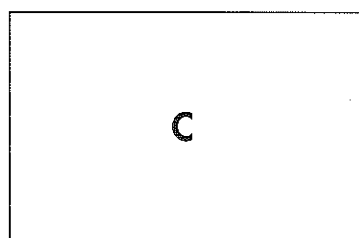
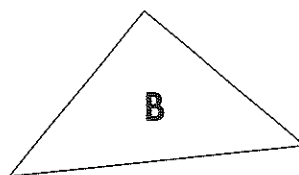
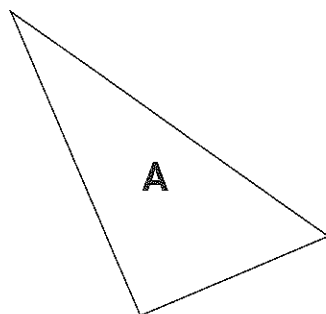


Figure	Number of sides	Number of angles	Number of right angles
A			
B			
C			
D			
E			
F			
G			
H			

2. Which of the following figures have at least one angle that is greater than a right angle?

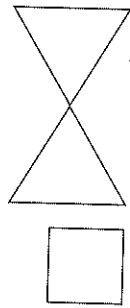


Figures _____

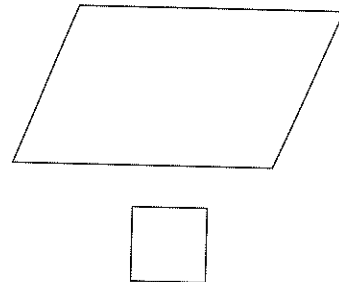
Exercise 3 : Quadrilaterals and Triangles

1. Check (✓) the box below each figure if it is a parallelogram.

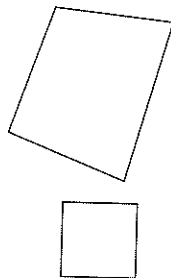
(a)



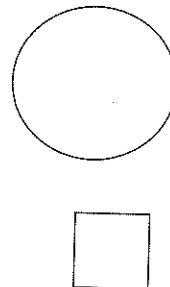
(b)



(c)



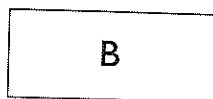
(d)



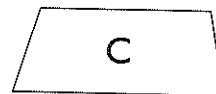
2. Which of the following quadrilaterals have 2 pairs of parallel sides?



square



rectangle



trapezium



triangle



semicircle



rhombus

Quadrilaterals _____

3. Name the triangles.

(a) This triangle has 2 equal sides.

_____ triangle

(b) This triangle has 3 equal sides.

_____ triangle

(c) This triangle has no equal sides.

_____ triangle

4. Use the words in the box to fill in the blanks.

right-angled isosceles

right-angled scalene

equilateral

scalene

(a) This triangle has one right angle and two equal sides.

_____ triangle

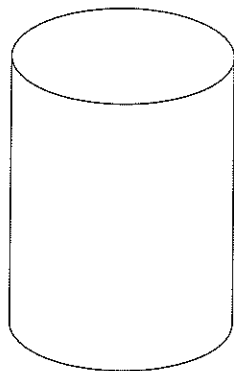
(b) This triangle has one right angle and no equal sides.

_____ triangle

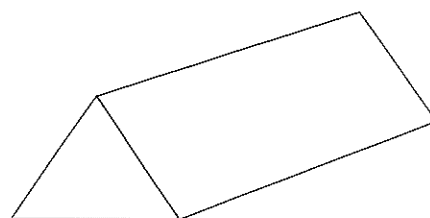
Exercise 4 : Solid Figures

1. Name the solid figures.

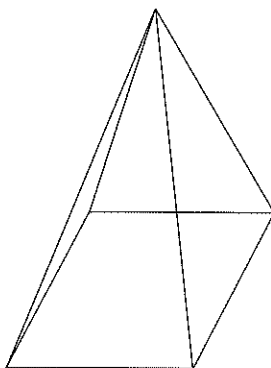
(a)



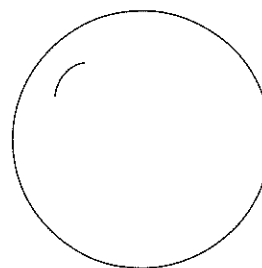
(b)



(c)



(d)



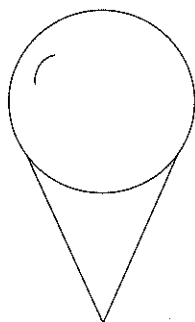
2. Fill in the blanks.

(a) A cylinder has _____ vertices.

(b) A cube has _____ faces, _____ edges and _____ vertices.

(c) A rectangular pyramid has _____ faces, _____ edges and _____ vertices.

3. Name the solids that are used to make the object below.



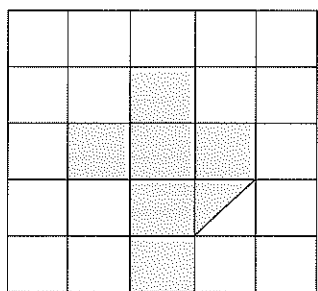
The object is made up of a _____ and
a _____.

Unit 13 : Area, Perimeter and Volume


Friendly Notes

Area

The space enclosed by the sides of a figure is its area.
The square centimeter and square inch are units of area.

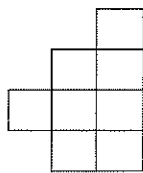


Each  is 1 square unit.

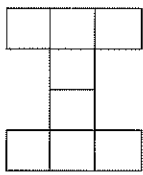
Each  is $\frac{1}{2}$ square unit.



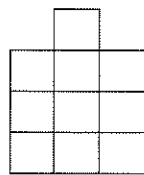
The area of the shaded part is $6\frac{1}{2}$ square units.




Shape A

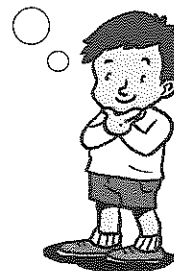


Shape B



Shape C

Each  is
1 square unit.



Shape A = 8 square units

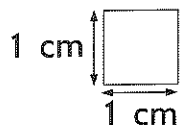
Shape B = 8 square units

Shape C = 10 square units

Shape A and Shape B have the same area.

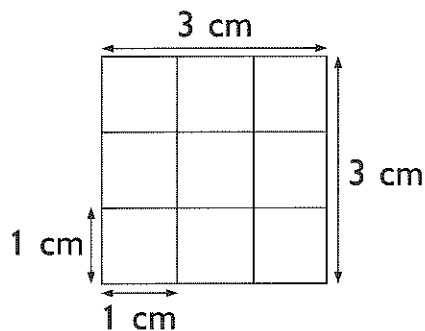
Shape C has a greater area than Shape A and Shape B.

This is a 1-cm square.



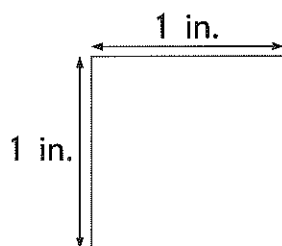
Its area is 1 square centimeter.

A 3-cm square is made up of nine 1-cm squares.

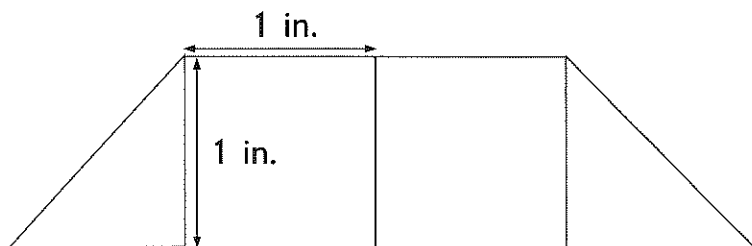


The area of a 3-cm square is 9 square centimeters.

Each side of this square is 1 inch long.



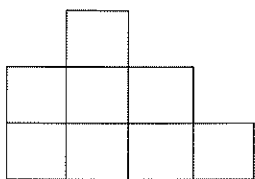
Its area is 1 square inch.



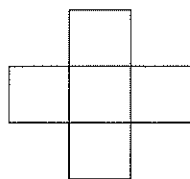
The area of the figure is 3 square inches.

Perimeter

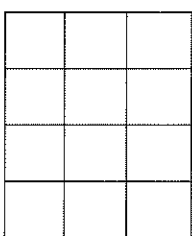
The distance around a figure is the perimeter of the figure.
The centimeter and inch are units of perimeter.



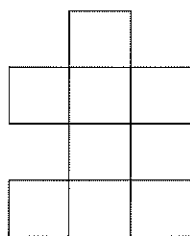
Shape A



Shape B



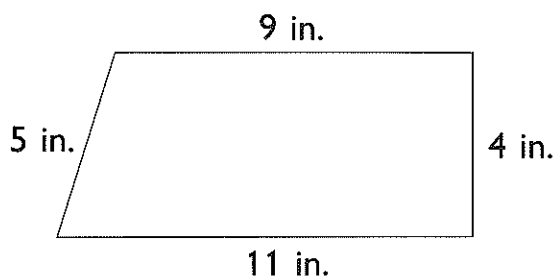
Shape C



Shape D

Shape A and Shape C have the same perimeter.
Shape D has the greatest perimeter.
Shape A and Shape D have the same area but
different perimeter.

The perimeter of the quadrilateral shown below is 29 in.



When we draw figures, we can make them smaller than the actual size. We label the sides with the actual lengths.



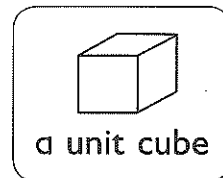
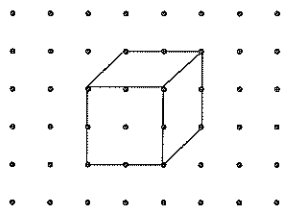
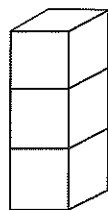
Volume

A solid is 3-dimensional.

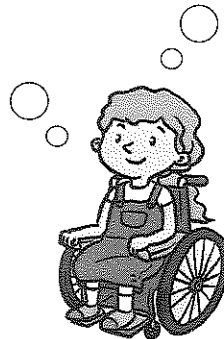
The volume of a unit cube is 1 cubic unit.

The amount of space a solid occupies is its volume.

This is the drawing of a unit cube on a dotted paper.



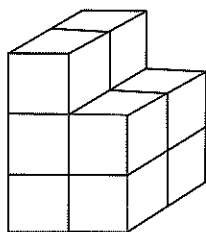
This solid is made up of
3 unit cubes.
Its volume is 3 cubic units.



The cubic centimeter (cm^3) is a unit of volume.

The volume of a 1-cm cube is 1 cubic centimeter (cm^3).

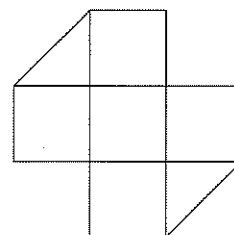
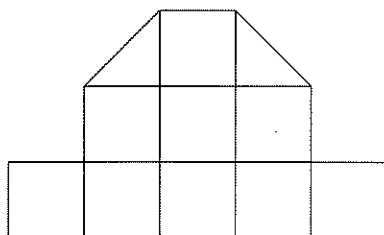
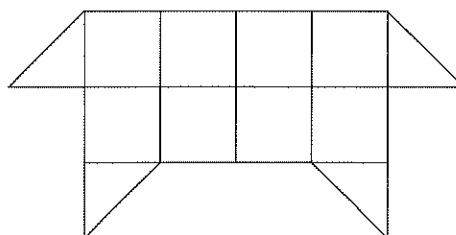
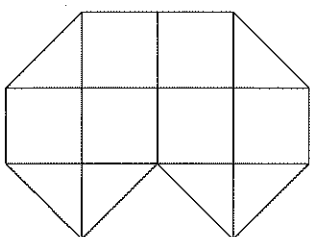
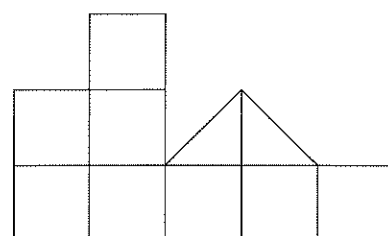
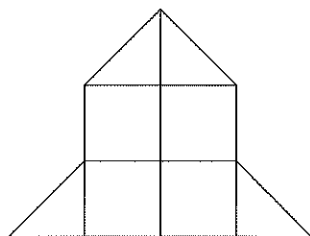
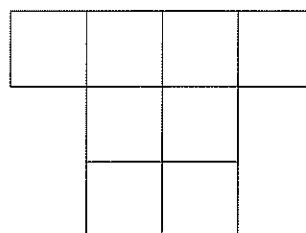
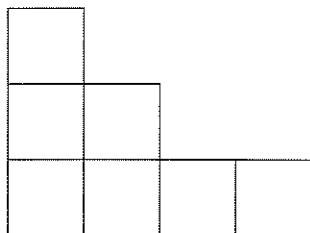
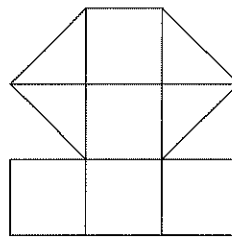
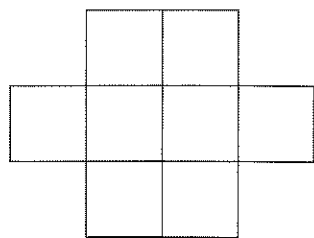
The solid is made up of 10 1-cm cubes.



The volume of the solid is 10 cm^3 .

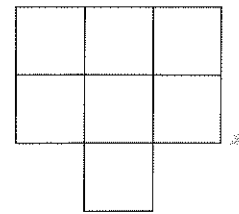
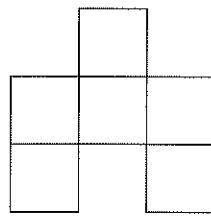
Exercise 1 : Area

1. Match the shapes that have the same area.

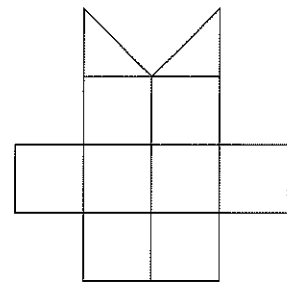
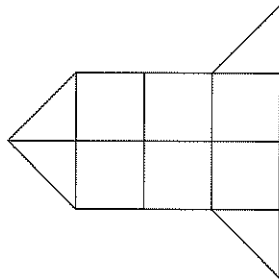


2. Circle the shape with a greater area.

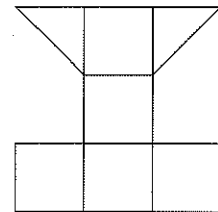
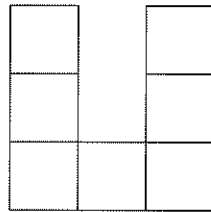
(a)



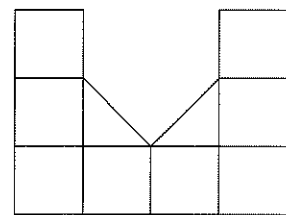
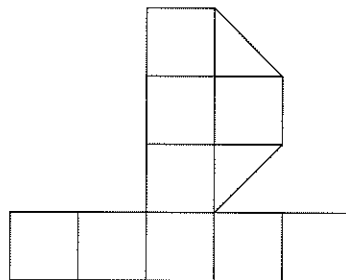
(b)



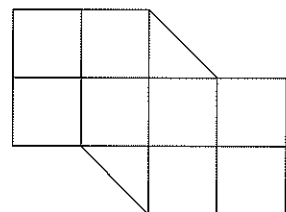
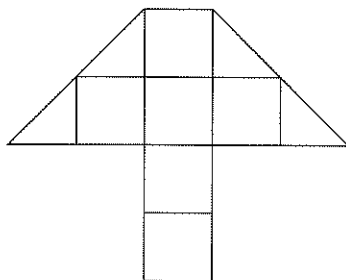
(c)



(d)

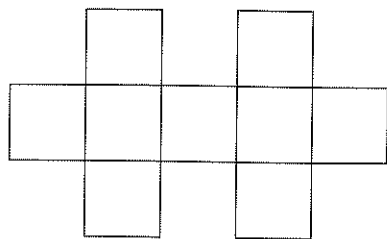



(e)



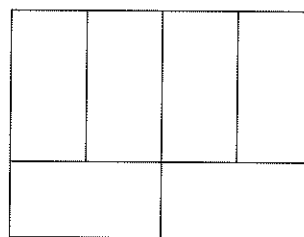
3. What is the area of each shape?

(a)



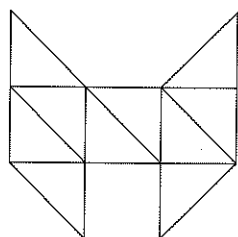
The area is ____ .

(b)



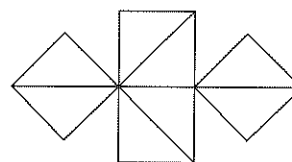
The area is ____ .

(c)



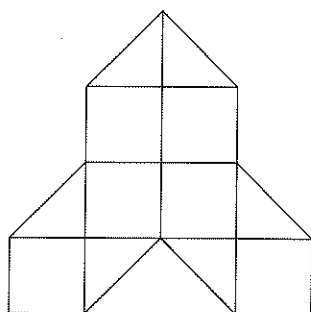
The area is ____ .

(d)



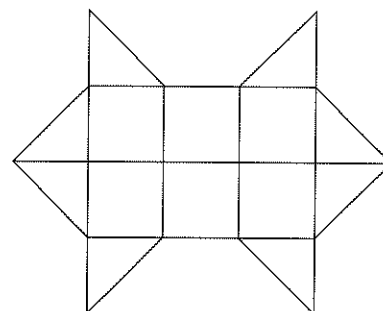
The area is ____ .

(e)



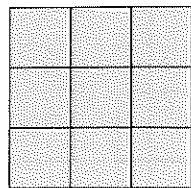
The area is ____ square units.

(f)

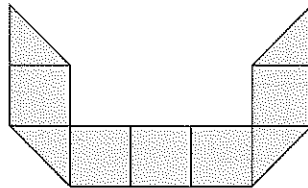


The area is ____ square units.

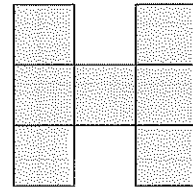
4. Find the area of each of the following figures.



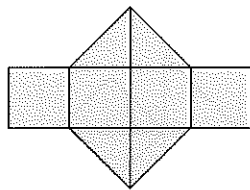
A



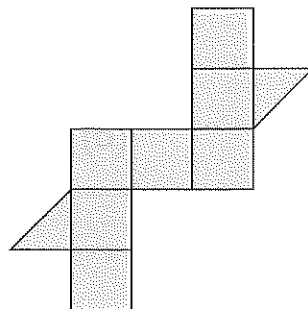
B



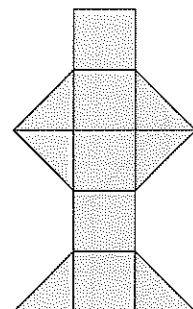
C



D



E



F

	Figure	Area
(a)	A	square units
(b)	B	square units
(c)	C	square units
(d)	D	square units
(e)	E	square units
(f)	F	square units

5. (a) What is the area of each of the following figures?

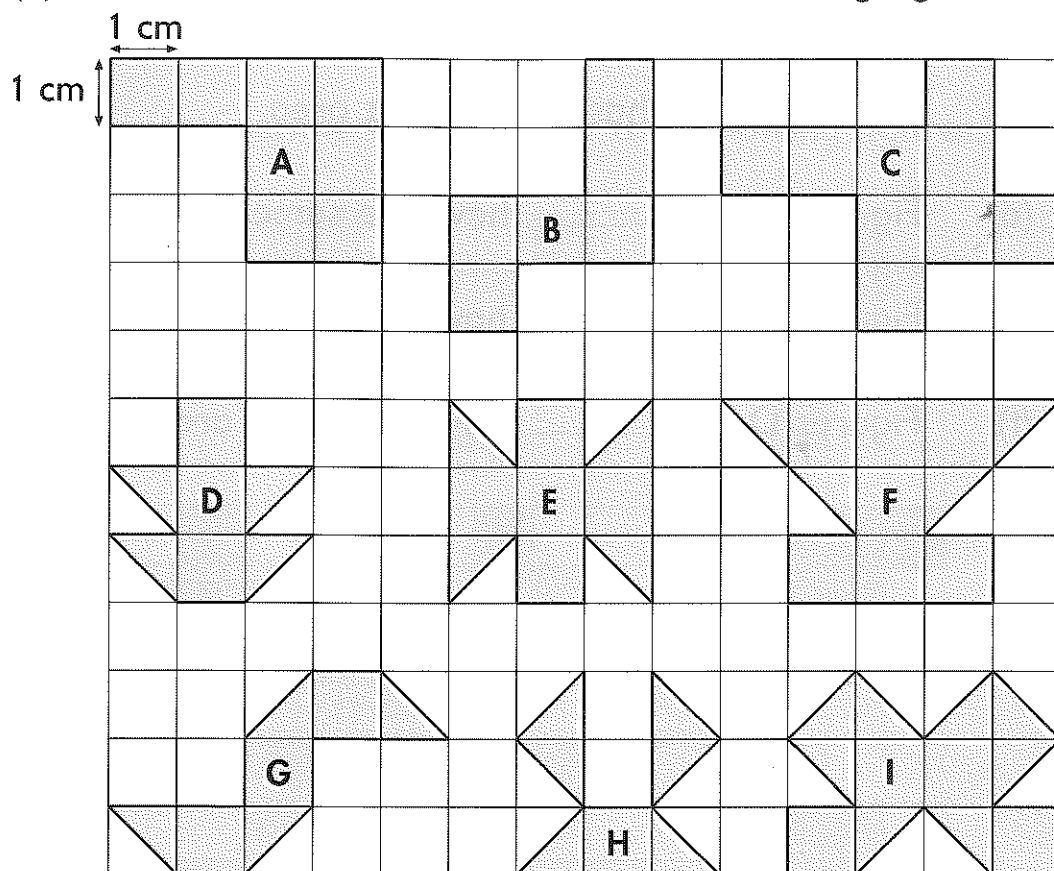
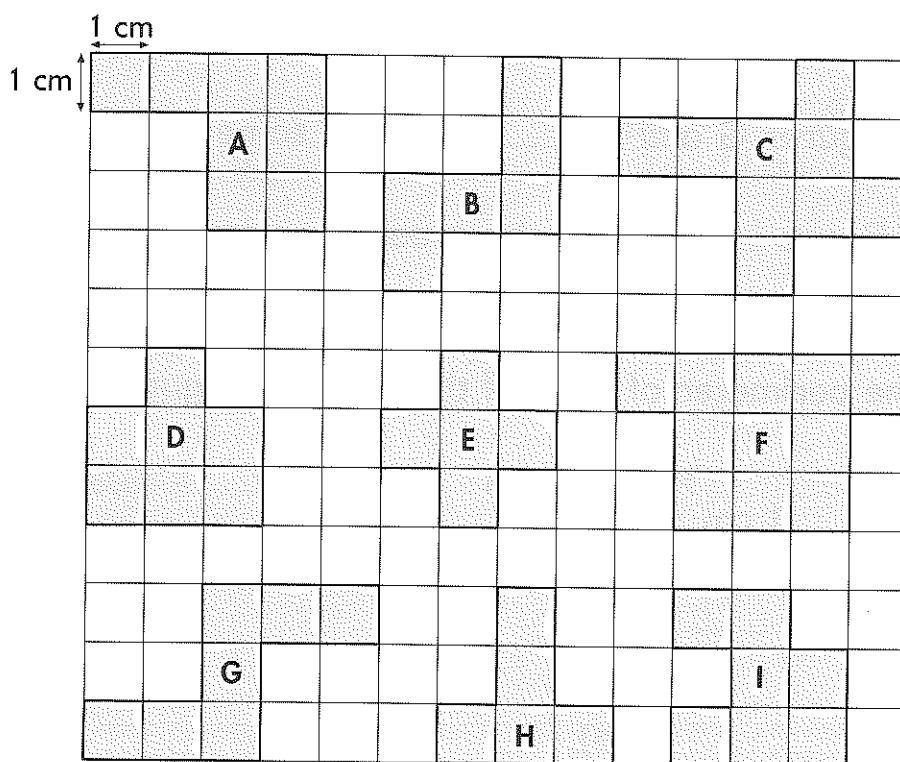


Figure	Area
A	cm ²
B	cm ²
C	cm ²
D	cm ²
E	cm ²
F	cm ²
G	cm ²
H	cm ²
I	cm ²

- (b) Figures _____ and _____ have the greatest area.
- (c) Figure _____ has the smallest area.
- (d) Figures A and _____ have the same area.
- (e) Figures C and _____ have the same area.
- (f) Figures D and _____ have the same area.

Exercise 2 : Perimeter

1. What is the perimeter of each of the following figures?

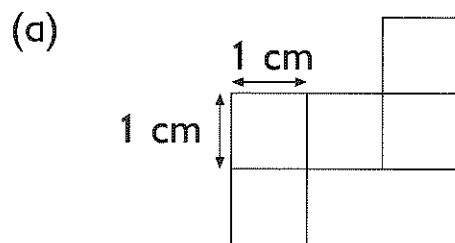


- (a) Complete the following table.

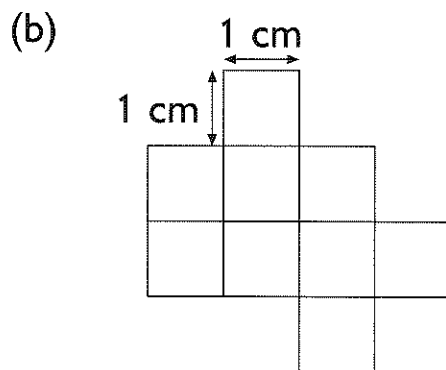
Figure	Perimeter
A	cm
B	cm
C	cm
D	cm
E	cm
F	cm
G	cm
H	cm
I	cm

- (b) Figures D, _____ and _____ have the same perimeter.
- (c) Figures A, _____ and _____ have the same perimeter.
- (d) Figures G and _____ have the same perimeter.
- (e) Figure _____ has the greatest perimeter.

2. Find the perimeter of each of the following figures.



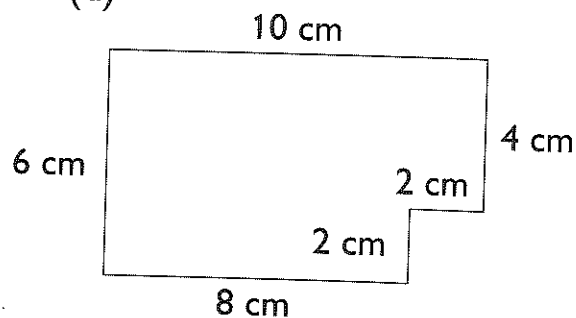
The perimeter is _____ cm.



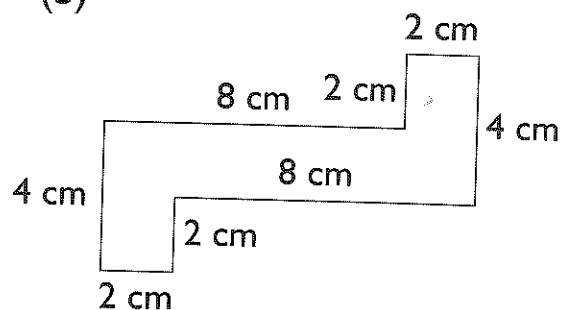
The perimeter is _____ cm.

3. Find the perimeter of each of the following figures.

(a)

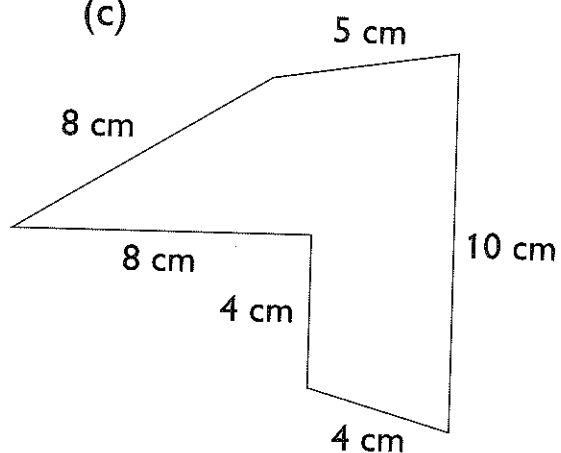


(b)

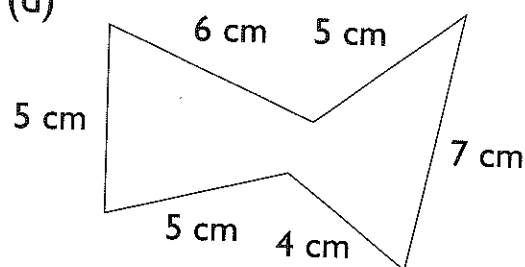


Perimeter = _____ cm Perimeter = _____ cm

(c)

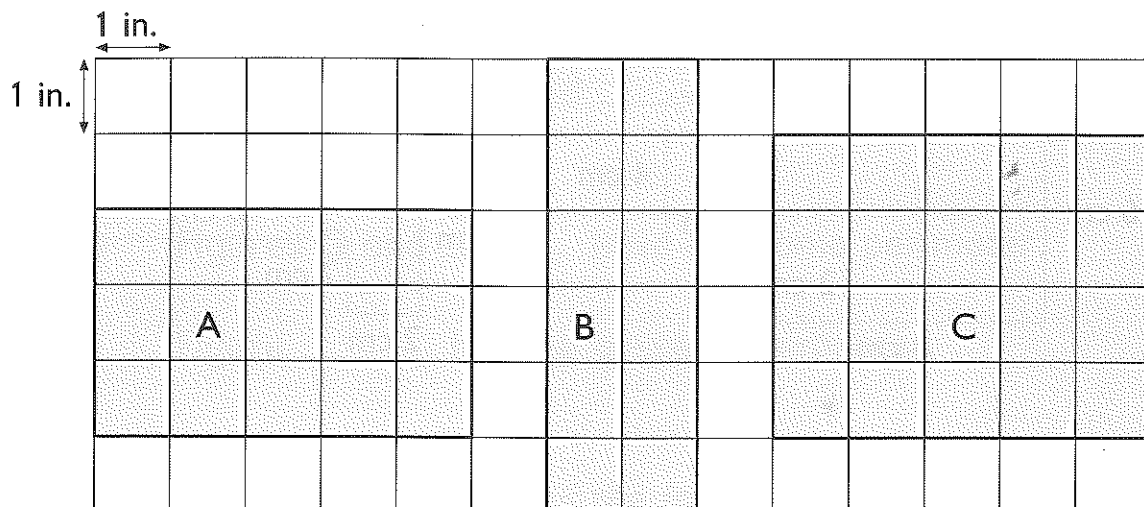


(d)



Perimeter = _____ cm Perimeter = _____ cm

4. (a) Complete the table below.

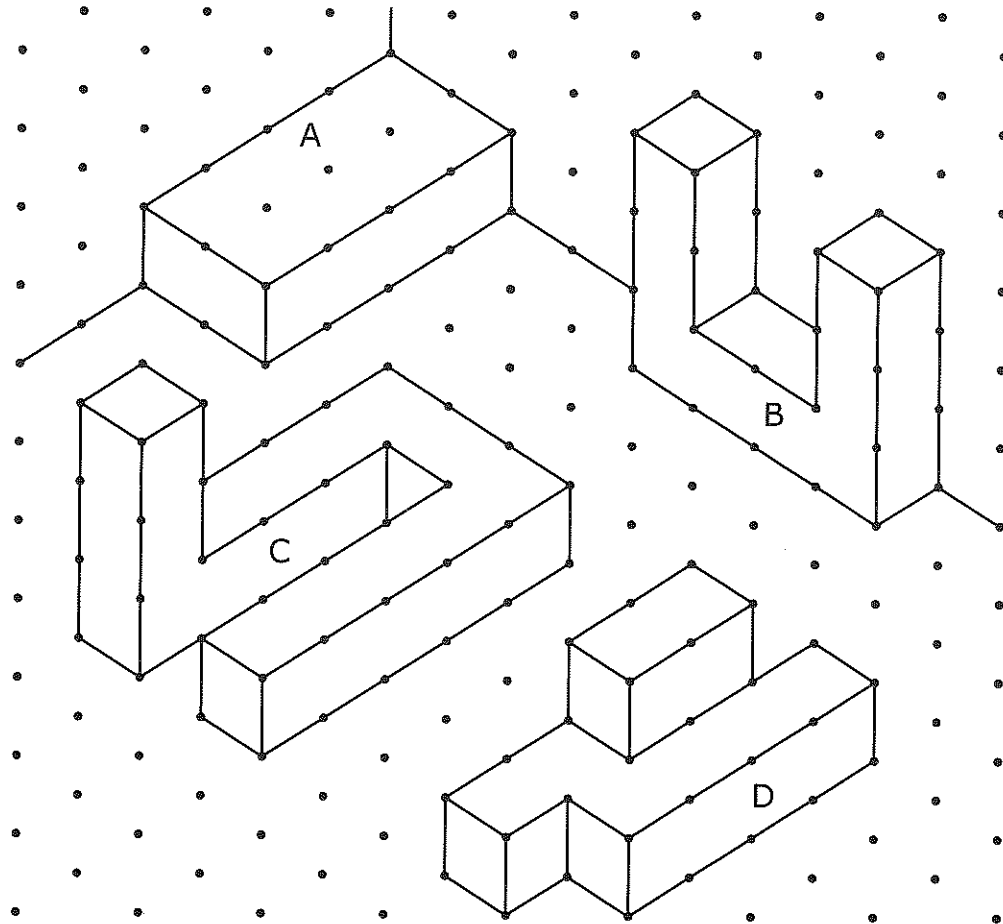


Rectangle	Perimeter	Area
A	in.	square inches
B	in.	square inches
C	in.	square inches

- (b) Rectangles _____ and _____ have the same perimeter but different area.
- (c) Rectangle _____ has the greatest perimeter.

Exercise 3 : Volume

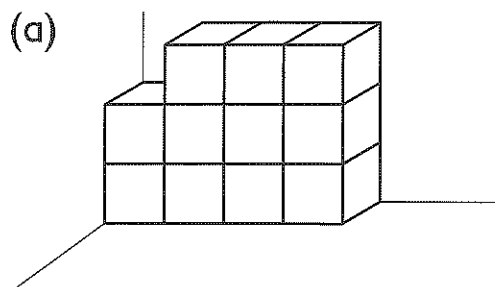
1. How many unit cubes are needed to build each of the following solids?



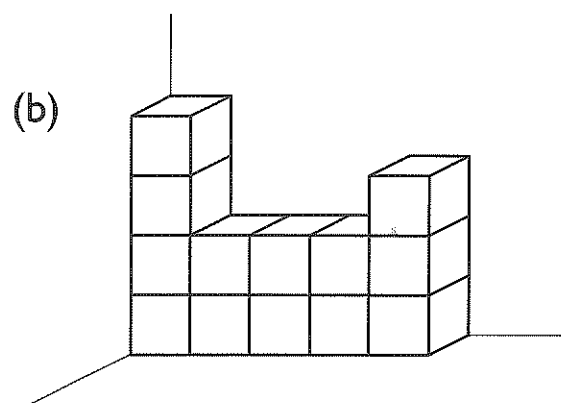
Complete the following table.

Solid	Number of unit cubes
A	
B	
C	
D	

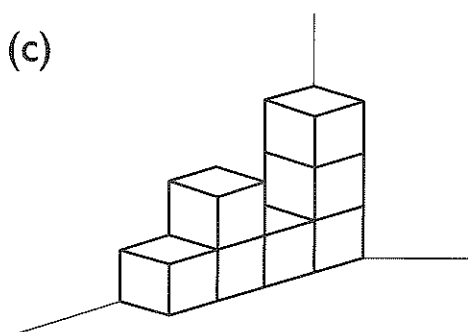
2. Find the volume of each solid.



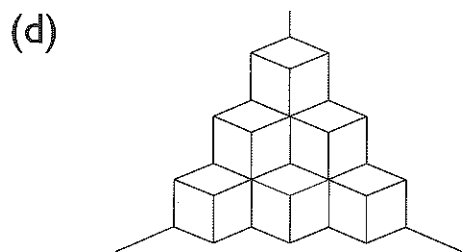
_____ cubic units



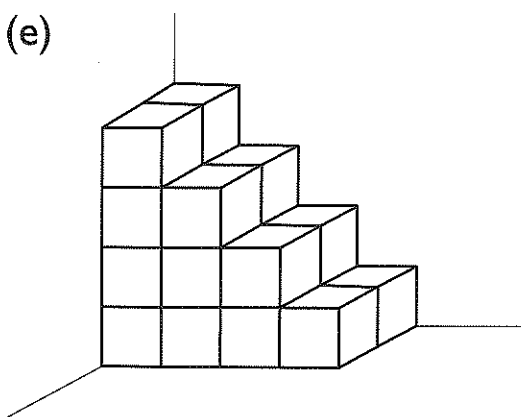
_____ cubic units



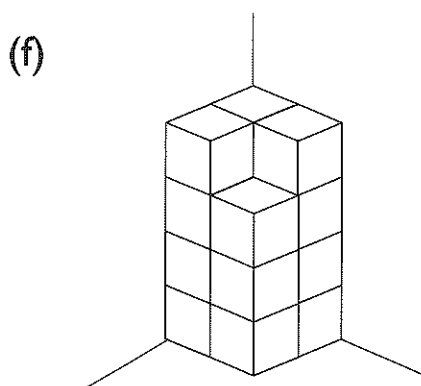
_____ cubic units



_____ cubic units



_____ cubic units

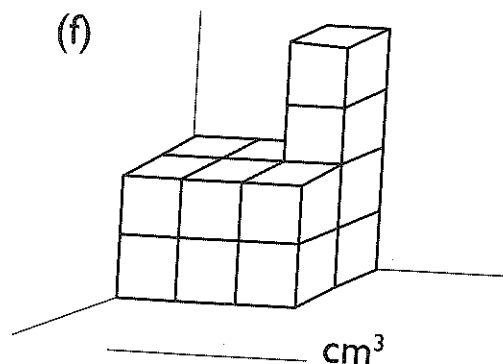
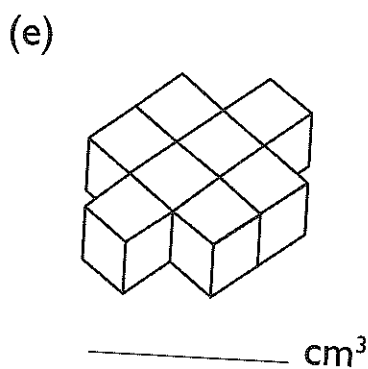
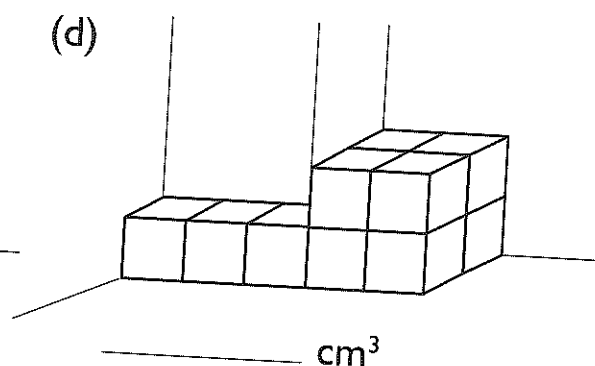
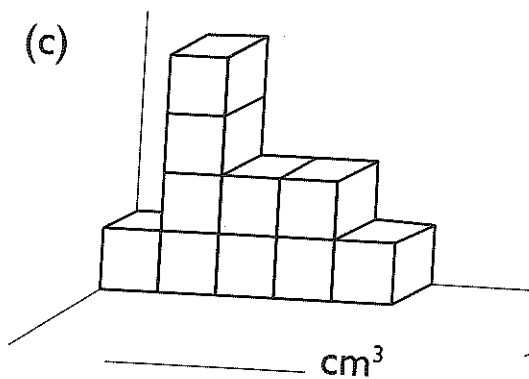
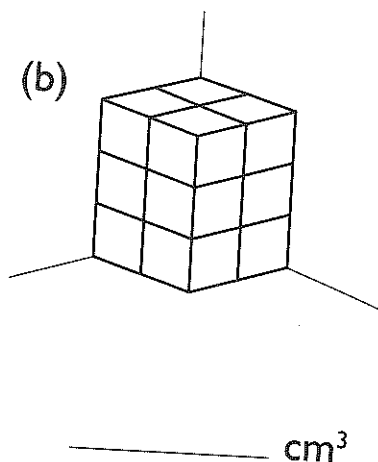
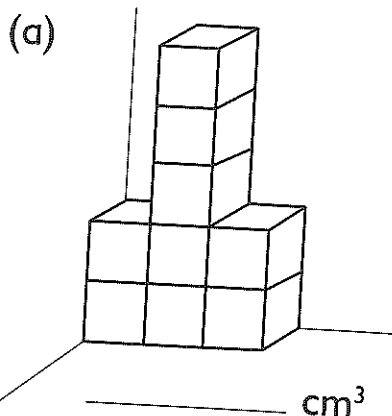


_____ cubic units

(g) Which solid has the greatest volume? _____

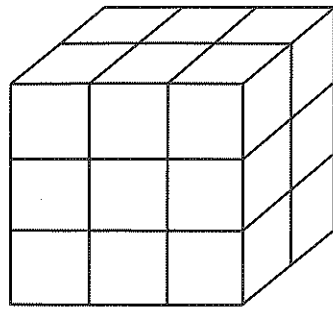
(h) Which solid has the smallest volume? _____

3. The following solids are made up of 1-cm cubes. Find the volume of each solid.

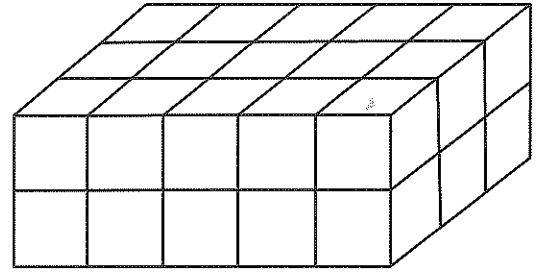


4. The solids are made up of 1-cm cubes.
Complete the table below the solids.

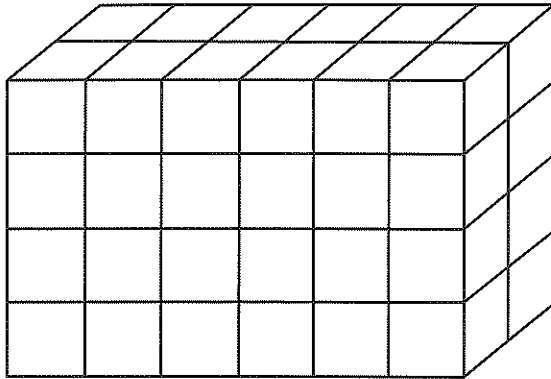
(a)



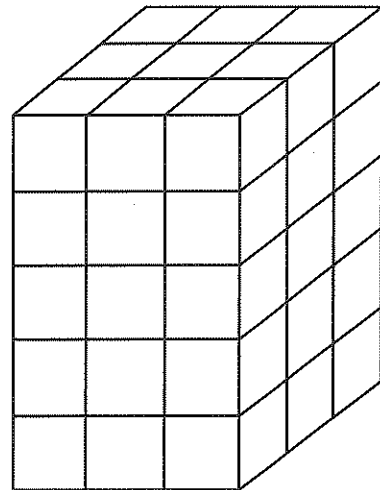
(b)



(c)



(d)



Solid	Length (cm)	Width (cm)	Height (cm)	Volume (cm ³)
A				
B				
C				
D				

ANSWERS

Unit 1 Numbers to 10,000

Exercise 1A

- (a) 3104 (b) 7035
- (a) 204 (b) 3711 (c) 4009 (d) 1500
(e) 5243
- (a) Five hundred twenty
(b) Three thousand, eight hundred five
(c) Five thousand, one
(d) Six thousand, forty-three
(e) Seven thousand, two hundred ninety
(f) Nine thousand, eighteen
- (a) 200 (b) 70 (c) 1 (d) 4000
(e) 40 (f) 800

Exercise 1B

- (a) 4, 3, 1, 5 (b) 4000
(c) hundreds, 300 (d) 1, 10
(e) 5, 5
- (a) 8, 60, 700, 1000 (b) 8, 90, 600, 2000
(c) 2, 50, 700, 3000 (d) 4, 10, 600, 9000
- (a) 3000 (b) 3 (c) 300 (d) 30

Exercise 1C

- (a) 2186 (b) 8137 (c) 6857 (d) 2382
- (a) 5781 (b) 6624 (c) 8017 (d) 9532
- (a) < (b) < (c) > (d) >
- (a) 4009, 4067, 4135, 4302
(b) 6531, 6513, 6351, 6315

Exercise 2

- (a) 1039 (b) 1816 (c) 3590 (d) 4992
(e) 8074 (f) 8001
- (a) 1 (b) 10 (c) 100 (d) 1000
- (a) 7660 (b) 7669 (c) 7759 (d) 8659
- (a) 4040 (b) 4310 (c) 7010 (d) 4013
- (a) 9250 (b) 9223 (c) 6253 (d) 8953
- (a) 6255, 6355 (b) 6361, 7361
(c) 2399, 2369 (d) 68, 3068
(e) 8652, 5652 (f) 3726, 3426

Exercise 3

- (a) 110; 110, 100; 110
(b) 110, 120; 120
- 5700; 5600, 5700; 5600
- (a) 320 (b) 470 (c) 600
(d) 1020 (e) 3620 (f) 4760
- (a) 1600 (b) 9100 (c) 3100
(d) 2300 (e) 7600 (f) 5600
- (a) 6000 (b) 9000 (c) 5000
(d) 9000 (e) 4000 (f) 3000

Unit 2 Addition and Subtraction

Exercise 1A

- (a) 33 (b) 41 (c) 53 (d) 63 (e) 77
- (a) 37, 45, 45 (b) 46, 55, 55
(c) 88, 94, 94
- (a) 87 (b) 77 (c) 58

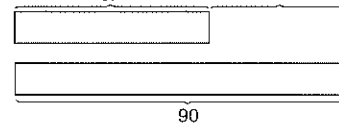
Exercise 1B

- (a) 24 (b) 38 (c) 49 (d) 68 (e) 77
- (a) 12, 6, 6 (b) 37, 28, 28
(c) 41, 34, 34
- (a) 14 (b) 56 (c) 15

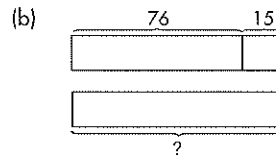
Exercise 1C

- (a) 74 (b) 14 (c) 39 (d) 18
- (a) 47 (b) 61 (c) 77 (d) 91

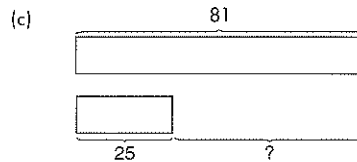
- (a) 5 (b) 50 (c) 40 (d) 10
- (a) 57 ?



$$90 - 57 = 33$$



$$76 + 15 = 91$$



$$81 - 25 = 56$$

- (a) 58 (b) 56 (c) 95
- (a) - (b) + (c) - (d) -
- (a) > (b) > (c) < (d) =
(e) > (f) =

Exercise 2A

- (a) 538 (b) 703 (c) 530
(d) 726 (e) 77 (f) 467
- (a) 660 (b) 794 (c) 649
(d) 702
- (a) 60, 80, 140 (b) 60, 90, 150
(c) 670, 200, 870 (d) 90, 80, 10
(e) 90, 30, 60 (f) 260, 140, 120
- (a) 600, 300, 900 (b) 700, 200, 900
(c) 700, 200, 900 (d) 1000, 600, 400
(e) 800, 700, 100 (f) 800, 400, 400
- (a) 27 (b) 83 (c) 18
(d) 61 (e) 28
- (a) 188 (b) 600 (c) 435 (d) 430 (e) 350

Exercise 2B

- (a) 251 (b) 62 (c) 858 (d) 211

Exercise 3

- (a) 3080 (b) 2007 (c) 3705
(d) 5025 (e) 8038 (f) 9000
- (a) 1352 (b) 3352 (c) 1527
(d) 5527 (e) 9816
- (a) 1333 (b) 2519 (c) 1880
(d) 1814 (e) 2523 (f) 3319
(g) 5141 (h) 4800 (i) 7013
(j) 8332 (k) 6566 (l) 4733
(m) 10,000 (n) 9302 (o) 9302

Exercise 4

- (a) 1902 (b) 2680 (c) 4570
(d) 4400 (e) 7300 (f) 8600
- (a) 907 (b) 639 (c) 718
(d) 395 (e) 279
- (a) 1364 (b) 817 (c) 1908
(d) 2124 (e) 2321 (f) 2678
(g) 1946 (h) 1556 (i) 803
(j) 2997 (k) 4997 (l) 169
(m) 3946 (n) 4 (o) 6234

Exercise 5

1. (a) \$3058 (b) 19 (c) 4076 (d) \$798

Unit 3 Multiplication and Division

Exercise 1

1. 12
 2. $5 \times 4 = 20$, $4 \times 5 = 20$
 3. 7, 2
 4. 24, 24, 8, 3
 5. (a) 10 (b) 18 (c) 36 (d) 0
 6. (a) 8 (b) 9 (c) 6 (d) 8
 7. (a) 9, 9 (b) 7, 7

Exercise 2

1. (a) 45 (b) 8 m (c) 10
 (d) 9 (e) 6 lb (f) 24

Exercise 3

1. (a) 18, 180 (b) 16, 160 (c) 30, 3000 (d) 28, 2800
 2. (a) 120 (b) 100 (c) 1200 (d) 1000
 (e) 219 (f) 46 (g) 355 (h) 244
 3. (a) 272 (b) 1095 (c) 1044 (d) 2500
 (e) 1590 (f) 2871 (g) 4848 (h) 6262
 (i) 9220 (j) 9492 (k) 6430 (l) 9560
 4. (a) 189 (b) 320 (c) 288 (d) 178
 (e) 828 (f) 1167 (g) 2115 (h) 4250
 5. (a) 692 (b) 625 (c) 189
 (d) (i) 4000 (ii) 4272
 (e) (i) \$9000 (ii) \$9375

Exercise 4

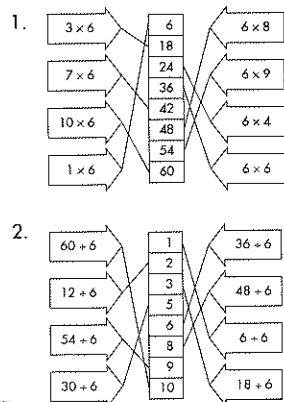
1. 25, 37, 281, 403, 2649
 2. 18, 46, 318, 360, 4816
 3. (a) 34, 0 (b) 15, 1
 4. (a) 11, 2 (b) 22, \$1

Exercise 5

1. (a) 8 (b) 12 (c) 37 R 8 (d) 50 R 3
 2. (a) 231, 2 (b) 213, 2 (c) 121, 4 (d) 428, 1
 3. (a) 8 R 3 (b) 17 (c) 35 R 1
 (d) 19 R 4 (e) 27 (f) 5 R 4
 (g) 103 (h) 265 (i) 105
 (j) 183 R 3 (k) 240 R 2 (l) 24
 4. (a) 36 (b) 21 (c) 45, 5
 (d) 114, 4

Unit 4 Multiplying and Dividing by 6, 7, 8 and 9

Exercise 1



3. (a) 126 (b) 204 (c) 270
 (d) 1548 (e) 2220 (f) 2592
 (g) 3030 (h) 3600 (i) 4278
 (j) 4620 (k) 5436 (l) 5724
 4. (a) 8 R 1 (b) 11 R 2 (c) 12
 (d) 13 (e) 14 (f) 16
 (g) 43 (h) 50 (i) 65
 (j) 83 R 2 (k) 92 (l) 89 R 3
 5. (a) 45, 4 (b) \$4392 (c) \$150

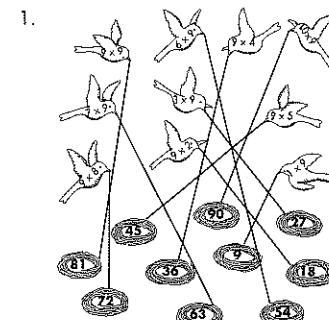
Exercise 2

1. (a) 7 (b) 14 (c) 21 (d) 28 (e) 35
 (f) 42 (g) 49 (h) 56 (i) 63 (j) 70
 2.
3. (a) 140 (b) 469 (c) 553 (d) 658
 (e) 1421 (f) 2492 (g) 3500 (h) 4298
 (i) 5943
 4. (a) 7 R 4 (b) 9 R 1 (c) 10 R 2 (d) 11
 (e) 36 (f) 40
 (g) 59 (h) 100 R 5 (i) 104
 (j) 121 (k) 125 (l) 137 R 1
 5. (a) 15 (b) 623 (c) \$576

Exercise 3

- 1.
2. (a) 104 (b) 192 (c) 280 (d) 336
 (e) 544 (f) 632 (g) 832 (h) 1728
 (i) 2864 (j) 2960 (k) 3368 (l) 4872
 3. (a) 4 R 5 (b) 8 (c) 9 R 3 (d) 11
 (e) 11 R 6 (f) 12 R 2 (g) 13 R 2 (h) 25
 (i) 47 (j) 63 R 4 (k) 83 R 6 (l) 94
 4. (a) 96 (b) 224 (c) 75

Exercise 4



5. (a) A (b) B (c) B
(d) 2 kg 850 g (e) 10 (f) A, B
6. (a) (i) 380 g (ii) 130 g (iii) 120
(b) (i) 3 kg (ii) 1 kg (iii) 4

Exercise 2

1. (a) 2 kg 700 g (b) 45 kg 100 g
(c) 540 g (d) 3 kg 430 g, 9 kg 30 g
(e) 560 g

Exercise 3

1. (a) 1 lb 2 oz (b) 1 lb 9 oz (c) 1 lb 0 oz
2. (a) 64 (b) 37 (c) 106
(d) 60 (e) 94 (f) 150
3. (a) 14 (b) 12 (c) 3
(d) 12 (e) 75 (f) 2
4. (a) C (b) 19 (c) B
(d) 12 (e) A, C (f) 2 lb 14 oz

Unit 8 Capacity

Exercise 1

1. (a) 65 (b) 250 (c) 150
(d) 700 (e) 300 (f) 900
2. (a) 5 l 600 ml (b) 5 l 600 ml
(c) 11 l 200 ml (d) 9 l 200 ml
3. (a) 1005 (b) 1200 (c) 2015 (d) 3525
4. (a) 1 l 600 ml (b) 2 l 895 ml (c) 3 l 5 ml
(d) 3 l 70 ml
5. (a) 1 l 650 ml (b) 3 l 900 ml
(c) 7 l 715 ml (d) 5 l 430 ml
(e) 7 l 372 ml (f) 2 l 900 ml
(g) 2 l 770 ml (h) 3 l 110 ml
(i) 2 l 853 ml
6. (a) 1900 ml or 1 l 900 ml
(b) 3085 ml
(c) 1 l 450 ml or 1450 ml

Exercise 2

1. (a) 38 (b) 47
2. (a) 16 (b) 21
3. (a) 48 (b) 135
4. (a) 6 (b) 12
5. (a) 14 qt 0 pt (b) 5 gal 0 qt
(c) 8 pt 0 c (d) 451 pt 1 c
(e) 5 gal 3 qt (f) 3 qt 1 pt
6. (a) 2 qt 3 c (b) 1 qt 1 c
(c) 4 qt 3 c
7. (a) 4 gal 2 qt (b) 2 gal 2 c
(c) 1 gal 6 pt

Unit 9 Money

Exercise 1

1. (a) \$16.55 (b) \$22.41 (c) \$70.75 (d) \$55.12
2. (a) \$2.95 (b) \$10.20 (c) \$14.15 (d) \$23.60
(e) \$30.75 (f) \$94.15 (g) \$512.05 (h) \$4040
3. (a) Five dollars fifty cents
(b) Ten dollars ten cents
(c) Fifty-seven dollars seventy-five cents
(d) Eighty-three dollars forty cents
(e) Two hundred sixty-one dollars
(f) Four thousand, five hundred sixty-seven dollars

Exercise 2

1. (a) \$9.75, \$10.40 (b) \$11.45, \$11.60
(c) \$39.05, \$39.90 (d) \$83.75, \$84.30
2. (a) \$6 (b) \$9 (c) \$10 (d) \$14
(e) \$18 (f) \$15 (g) \$13.39 (h) \$17.49
(i) \$45.10 (j) \$39.65
3. (a) \$8.05 (b) \$12.10 (c) \$30
(d) \$71.40 (e) \$42.70 (f) \$43.75
4. (a) \$50.50, \$4.25, \$54.75

- (b) \$12.99, \$2.35, \$15.34
(c) \$5.45, \$27.85, \$33.30
(d) \$11.20, \$15.60, \$26.80
(e) \$4.25, \$50.50, \$11.20, \$65.95
(f) \$27.85, \$12.99, \$15.60, \$56.44
5. (a) \$8.80 (b) \$8.20 (c) \$54.50
(d) \$9.75 (e) \$35.51 (f) \$12.30

Exercise 3

1. (a) \$2.25, \$2.05 (b) \$3.10, \$2.20
(c) \$16, \$15.70 (d) \$15.05, \$14.10
2. (a) \$2.50 (b) \$1.70 (c) \$16.60
(d) \$22.25 (e) \$64.75 (f) \$26.20
(g) \$15.90 (h) \$29.45 (i) \$17.20
(j) \$18.06
3. (a) \$2.40 (b) \$1.05 (c) \$1.30
(d) \$3.65 (e) \$22.15 (f) \$2.55
4. (a) \$6.20 (b) \$8.85 (c) \$7.65
(d) \$1.95 (e) \$13.27

Exercise 4

1. (a) 750¢ or \$7.50 (b) 1120¢ or \$11.20
(c) \$36 (d) \$201.60
2. (a) 40¢ (b) 600¢ or \$6
(c) \$1.20 (d) \$5.02
3. (a) \$64.80 (b) \$8.60

Unit 10 Fractions

Exercise 1A

1. (a) $\frac{3}{5}$ (b) $\frac{2}{3}$ (c) $\frac{7}{9}$
(d) $\frac{1}{4}$ (e) $\frac{3}{8}$ (f) $\frac{5}{6}$
2. (a) Any 3 parts shaded (b) Any 2 parts shaded
(c) Any 1 part shaded (d) Any 7 parts shaded
3. (a) $\frac{2}{5}$ (b) $\frac{1}{3}$ (c) $\frac{7}{8}$ (d) $\frac{3}{6}$ or $\frac{1}{2}$
(e) $\frac{3}{10}$ (f) $\frac{4}{7}$ (g) $\frac{3}{8}$ (h) $\frac{6}{7}$
(i) $\frac{7}{12}$ (j) $\frac{5}{12}$

Exercise 1B

1. (a) $\frac{7}{9}$ (b) $\frac{3}{8}$ (c) $\frac{3}{4}$ (d) $\frac{2}{3}$
2. (a) $\frac{1}{3}$ (b) $\frac{6}{8}$ (c) $\frac{1}{8}$ (d) $\frac{1}{4}$
3. (a) $\frac{1}{3}$ (b) $\frac{7}{8}$ (c) $\frac{3}{5}$ (d) $\frac{1}{8}$
(e) $\frac{5}{6}$ (f) $\frac{10}{12}$ (g) $\frac{6}{7}$ (h) $\frac{8}{9}$
4. (a) $\frac{1}{4}$ (b) $\frac{1}{9}$ (c) $\frac{2}{8}$ (d) $\frac{5}{12}$
(e) $\frac{2}{5}$ (f) $\frac{6}{10}$ (g) $\frac{3}{6}$ (h) $\frac{1}{4}$
5. (a) $\frac{1}{5}, \frac{1}{6}, \frac{1}{7}$ (b) $\frac{4}{5}, \frac{4}{7}, \frac{4}{12}$
(c) $1, \frac{2}{3}, \frac{1}{3}$ (d) $\frac{7}{8}, \frac{5}{8}, \frac{1}{8}$
(e) $\frac{3}{4}, \frac{3}{5}, \frac{3}{7}$
6. (a) $\frac{1}{7}, \frac{1}{5}, 1$ (b) $\frac{5}{9}, \frac{5}{7}, \frac{5}{6}$
(c) $\frac{2}{5}, \frac{3}{5}, \frac{4}{5}$ (d) $\frac{5}{12}, \frac{9}{12}, \frac{10}{12}$
(e) $\frac{2}{9}, \frac{2}{7}, \frac{2}{3}$

Exercise 2

-
- (a) 3 (b) 8 (c) 1

(d) 1 (e) 4 (f) 10
- (a) $\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

(b) $\frac{2}{3} = \frac{4}{6} = \frac{8}{12}$
- (a) $\frac{9}{12}$ (b) $\frac{10}{12}$ (c) $\frac{8}{12}$ (d) $\frac{5}{10}$

(e) $\frac{3}{4}$ (f) $\frac{1}{3}$ (g) $\frac{1}{2}$ (h) $\frac{1}{3}$
- (a) $\frac{6}{9}$ (b) $\frac{1}{4}$
-
- (a) $\frac{1}{2}$ (b) $\frac{2}{3}$ (c) $\frac{4}{5}$

Exercise 3

- (a) $\frac{5}{8}$ (b) $\frac{6}{9}$ or $\frac{2}{3}$ (c) $\frac{6}{7}$

(d) $\frac{9}{10}$ (e) $\frac{8}{12}$ or $\frac{2}{3}$ (f) $\frac{10}{11}$
- (a) $\frac{5}{6}$ (b) $\frac{7}{9}$

Exercise 4

- (a) $\frac{5}{9}$ (b) $\frac{5}{12}$ (c) $\frac{5}{10}$ or $\frac{1}{2}$

(d) $\frac{3}{8}$ (e) $\frac{1}{4}$ (f) $\frac{4}{7}$
- (a) $\frac{3}{12}$ yd or $\frac{1}{4}$ yd (b) $\frac{6}{10}$ kg or $\frac{3}{5}$ kg

Exercise 5

- (a) $\frac{1}{3}$ (b) $\frac{1}{7}$
- (a) 6 (b) 24 (c) 45

(d) 18 (e) 84 (f) 100

Exercise 6

- (a) $\frac{8}{10}$ or $\frac{4}{5}$ (b) $\frac{6}{10}$ or $\frac{3}{5}$ (c) $\frac{3}{4}$
- (a) $\frac{1}{4}$ (b) $\frac{1}{2}$
- (a) $\frac{35}{100}$ or $\frac{7}{20}$ (b) $\frac{80}{100}$ or $\frac{4}{5}$
- (a) $\frac{2}{10}$ or $\frac{1}{5}$ (b) $\frac{2}{10}$ or $\frac{1}{5}$

Unit 11 Time

Exercise 1A

- (a) 10, 4, 10, 4 (b) 20, 8, 20, 8

(c) 25, 11, 25, 11 (d) 20, 1, 20, 1
- (a) 7:58 (b) 12:29 (c) 10:13

(d) 2:18 (e) 9:43 (f) 6:37
- (a) 2:30 a.m. (b) 8:20 p.m. (c) 4:15 p.m.

(d) 4:15 a.m. (e) 2:00 p.m. (f) 1:50 p.m.
- (a) 3:40, 15, 3:55

(b) 10:00, 2, 12:00

(c) 5:45, 1 h 40 min, 7:25

(d) 12:05, 4 h 25 min, 4:30

(e) 8:25, 1 h 30 min, 9:55
- (a) 9:05 a.m. (b) 10:20 p.m. (c) 5:10 p.m.

(d) 8:45 p.m. (e) 12:10 a.m. (f) 1:50 p.m.

Exercise 1B

- (a) 7:20 p.m. (b) 7 h 30 min (c) 8 h

(d) 65 (b) 155 (c) 3 h 15 min
- (a) 100 (b) 175 (c) 205

(d) 245 (e) 1 h 35 min (f) 1 h 50 min
- (a) 2 h 15 min (b) 4 h 45 min (c) 2 h 35 min

(d) 1 h 35 min (e) 2 h 50 min (f) 1 h 50 min
- (a) 5 h 5 min (b) 5 h 0 min (c) 1 h 40 min

(d) 1 h 20 min (e) 1 h 50 min (f) 1 h 55 min
- (a) 10:45 a.m. (b) 3 h 15 min

(c) Mrs. Ray, 20 min shorter

(d) 2 h 50 min

Exercise 2

- (a) 8 (b) 19
- (a) 205 (b) 3 min 20 s
- (a) 85 (b) 155

(c) 190 (d) 1 min 55 s

(e) 2 min 45 s (f) 4 min 0 s
- (a) 28 months (b) 22 months

(c) 33 months (d) 37 months
- (a) 35 (b) 2 years 4 months
- (a) 24 days (b) 15 days

(c) 11 days (d) 26 days
- (a) 20 (b) 3 weeks 1 day

Unit 12 Geometry

Exercise 1

Figure	Number of sides	Number of angles
(a) A	4	4
(b) B	5	5
(c) C	5	5
(d) D	6	6
(e) E	3	3
(f) F	9	9

- (a) only
- (a) 4, 4 (b) 8, 8

Exercise 2

Figure	Number of sides	Number of angles	Number of right angles
A	4	4	2
B	4	4	4
C	3	3	1
D	4	4	4
E	4	4	1
F	4	4	2
G	5	5	3
H	3	3	1

- D and E

Exercise 3

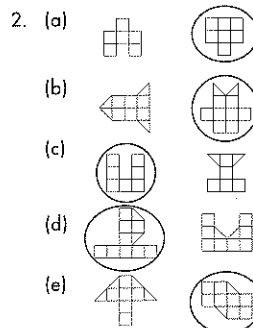
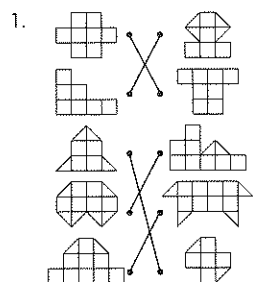
- (b) only
- A, B, F
- (a) isosceles (b) equilateral (c) scalene
- (a) right-angled isosceles (b) right-angled scalene

Exercise 4

- (a) cylinder (b) triangular prism
(c) rectangular pyramid (d) sphere
- (a) 0 (b) 6, 12, 8
(c) 5, 8, 5
- sphere, cone

Unit 13 Area, Perimeter and Volume

Exercise 1



- (a) 9 (b) 6 (c) 10
(d) 8 (e) 9 (f) 10
- (a) 9 (b) 7 (c) 7
(d) 6 (e) 8 (f) 8

5. (a)

Figure	Area
A	8 cm ²
B	6 cm ²
C	9 cm ²
D	5 cm ²
E	7 cm ²
F	9 cm ²
G	5 cm ²
H	4 cm ²
I	8 cm ²

- (b) C, F (c) H (d) I
(e) F (f) G

Exercise 2

1. (a)

Figure	Perimeter
A	14 cm
B	14 cm
C	18 cm
D	12 cm
E	12 cm
F	16 cm
G	16 cm
H	12 cm
I	14 cm

- (b) E, H (c) B, I (d) F (e) C
- (a) 12 (b) 16
- (a) 32 (b) 32 (c) 39 (d) 32

4. (a)

Rectangle	Perimeter	Area
A	16 in.	15 square inches
B	16 in.	12 square inches
C	18 in.	20 square inches

- (b) A, B (c) C

Exercise 3

1.

Solid	Number of unit cubes
A	8
B	8
C	13
D	10

- (a) 11 (b) 13 (c) 7
(d) 10 (e) 20 (f) 15
(g) E (h) C
- (a) 9 (b) 12 (c) 10
(d) 11 (e) 8 (f) 14

4.

Solid	Length (cm)	Width (cm)	Height (cm)	Volume (cm ³)
A	3	2	3	18
B	5	3	2	30
C	6	2	4	48
D	3	3	5	45