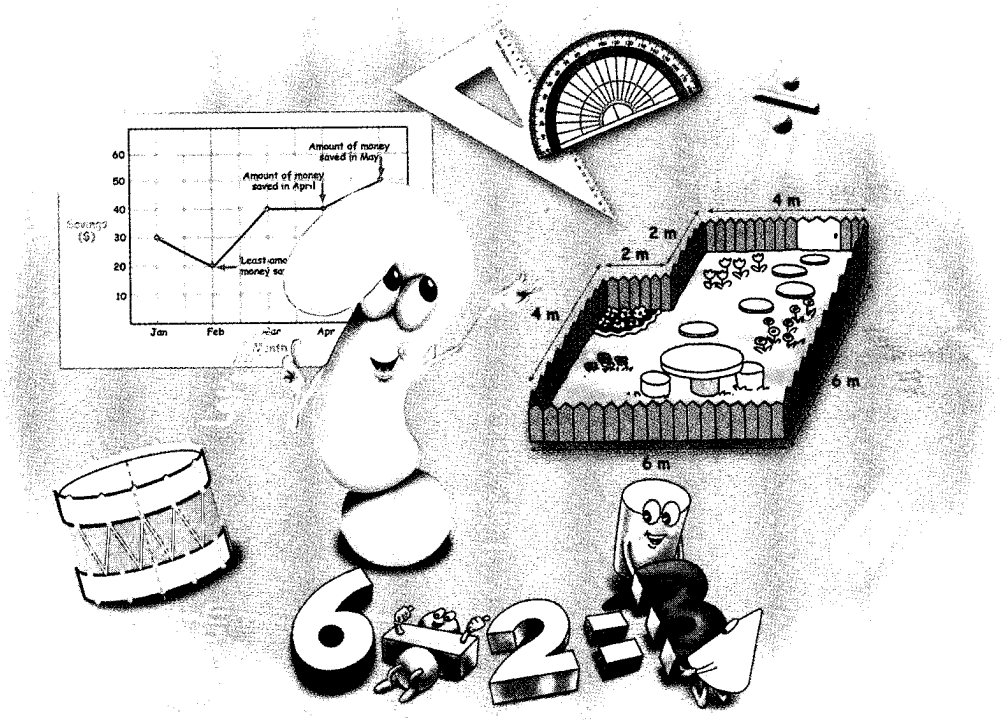
New Syllabus

Primary Mathematics



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shinglee publishers pte ltd

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First Published 2007

ISBN 978 981 237 308 3

Cover design by Dave Cheong

Printed in Singapore by KHL Printing Co Pte Ltd

PREFACE

The New Syllabus Primary Mathematics (NSPM) series is designed and written based on the latest primary mathematics syllabus. In this series, the concrete to abstract approach is adopted to introduce new concepts. Vivid and stimulating illustrations are used throughout the series to enhance learning. The knowledge base is built incrementally as the pupils progress up the levels so as to consolidate the linkages among mathematical concepts.

The series aims to meet the learning needs of pupils from Primary One to Six. It comprises textbooks and workbooks at each level. Every worksheet in the workbook corresponds to each concept learnt. Textbook 4B comprises 7 chapters. Each chapter comprises the following sections:

Do You Know? Relevant, thought-provoking questions are asked with regard to the real life situation presented at the beginning of each chapter to link Mathematics to daily life.

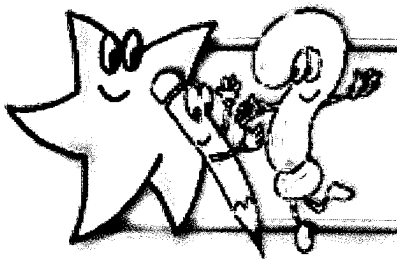
Let's Learn New concepts are explained in a straight-forward and interesting way. Creative and critical thinking, as well as an awareness of problem-solving strategies, are developed through worked examples in this section. Guided examples provide reinforcement and consolidation of the concepts taught.

Let's Explore Active participation in exploration of the concepts learnt and creative application of Mathematics to daily life, including IT and hands-on activities, help to develop lifelong learners. Social skills such as effective communication, cooperation and team spirit are encouraged through group and pair work.

Let's Think Opportunities are provided to develop higher order thinking skills and proficiency in applying the concepts learnt through non-routine and challenging questions.

Let's Try Exercises are provided for pupils to develop their problem-solving skills, so that pupils grow into confident and independent learners.

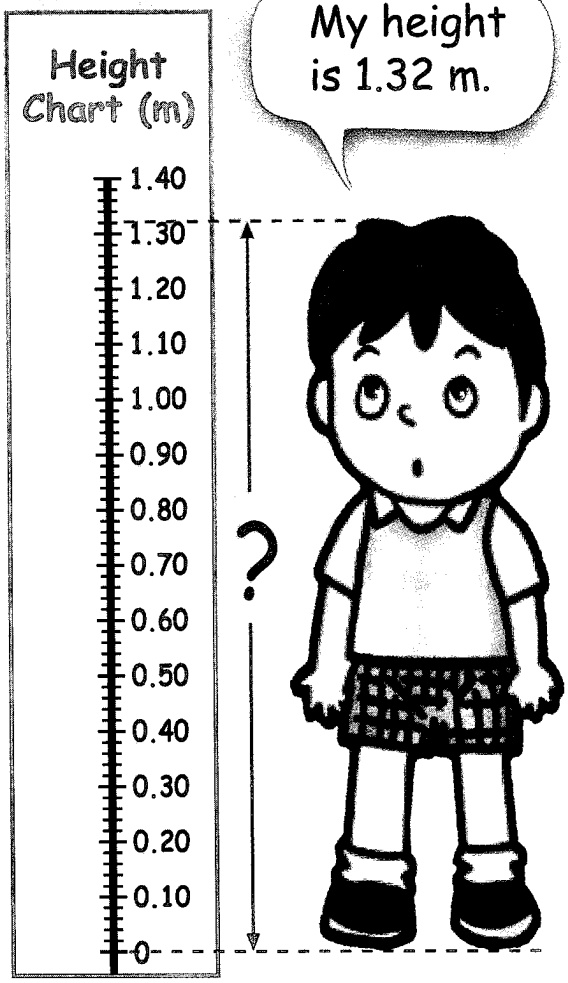
Fun with Maths Mathematical concepts are extended beyond the boundaries of the classroom and taken into the realm of games and experiments to further engage and develop pupils' interest in Mathematics.



CONTENTS

8 Decimals (I)

Drink
1.5 *l*
of water every day.

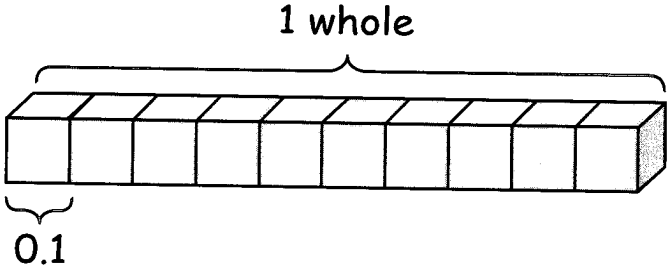


DO YOU KNOW?

What does ' • ' represent in the above numbers? How do we read these measurements?

Let's Learn .1 Tenths

Divide one whole into 10 equal parts.



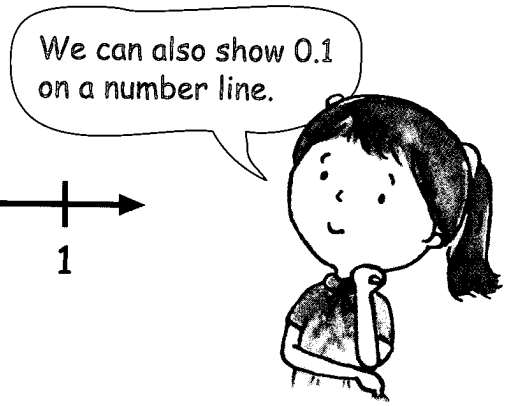
1 part = 1 tenth

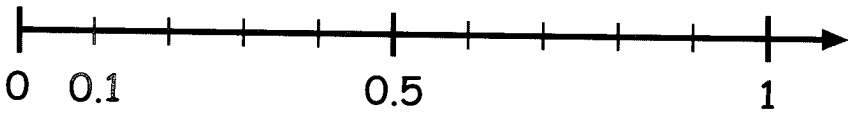
$= \frac{1}{10}$

= 0.1

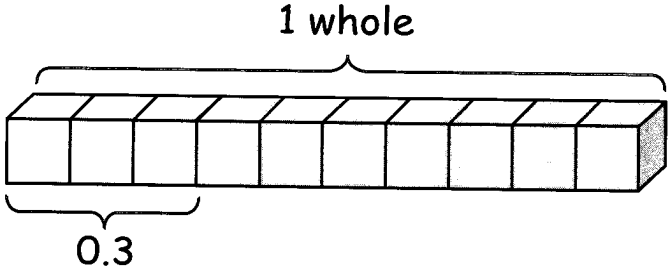
1 whole = 10 tenths

Ones	Tenths
0	1





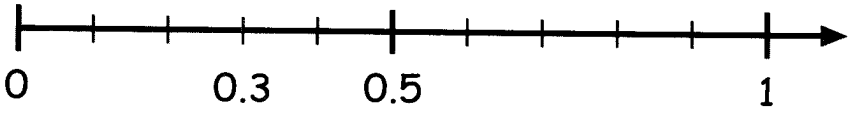
It is read as 'zero point one'.



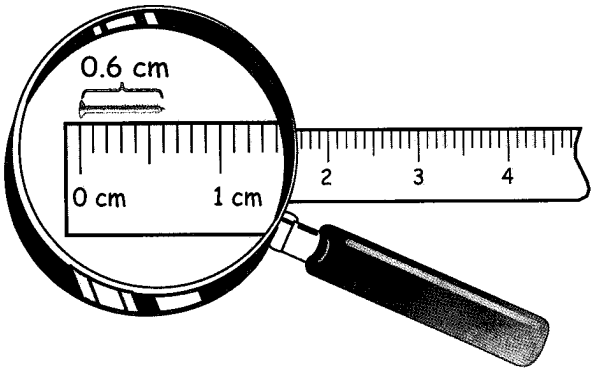
3 tenths = $\frac{3}{10}$

= 0.3

Ones	Tenths
0	3



1. John has a magnifying glass to help him read the measurement of the length of a nail for his science project.

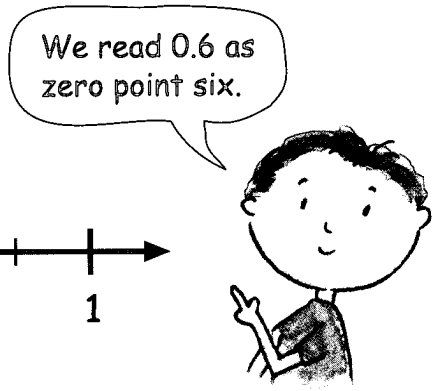


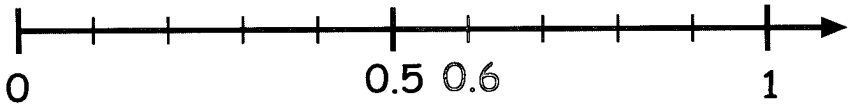
Length of nail
= 6 tenths of a centimetre

$= \frac{6}{10}$ cm

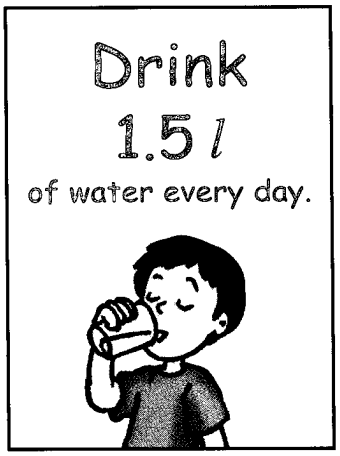
= 0.6 cm

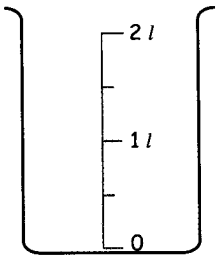
Ones	Tenths
0	6



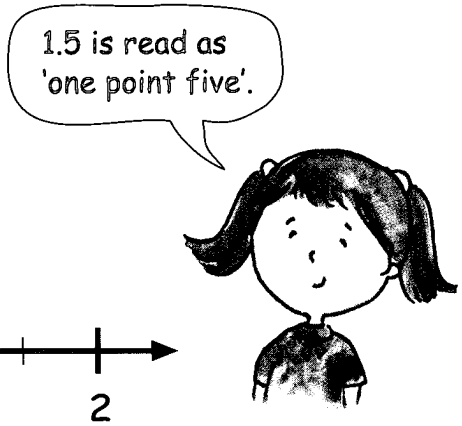


2.

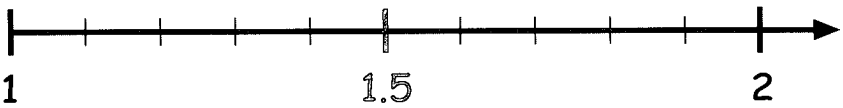




1.5
= 1 whole + 5 tenths
= 10 tenths + 5 tenths
= 15 tenths

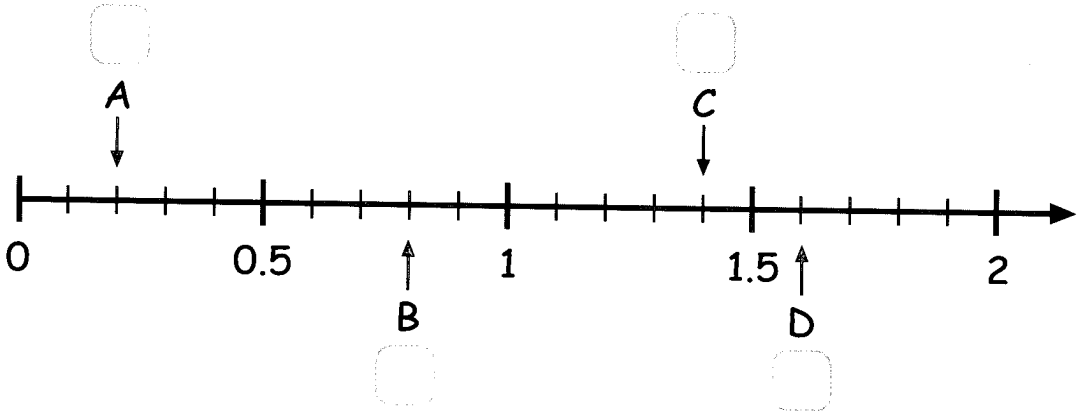


Ones	Tenths
1	5

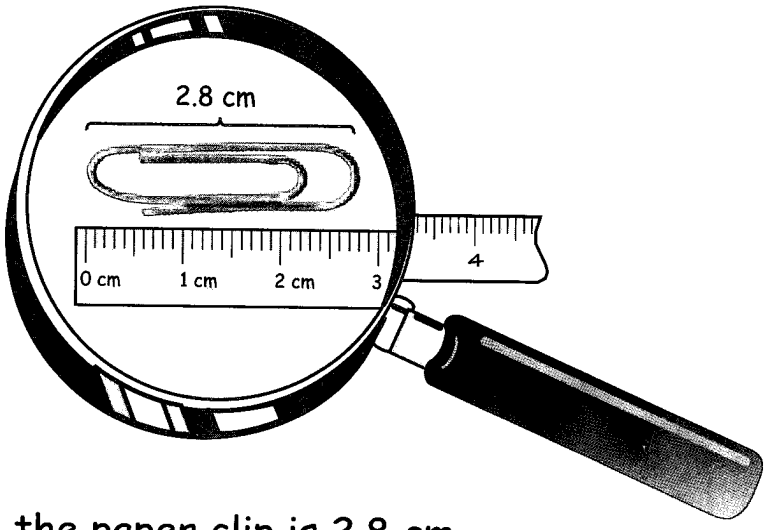


Let's Try .0. Tenths

1. What is the decimal represented by each letter?



2.



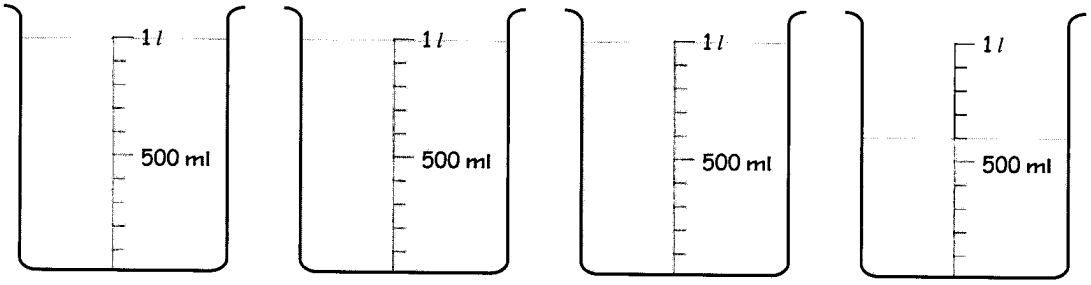
The length of the paper clip is 2.8 cm.

2.8 = ☐ wholes + ☐ tenths

= ☐ tenths + ☐ tenths

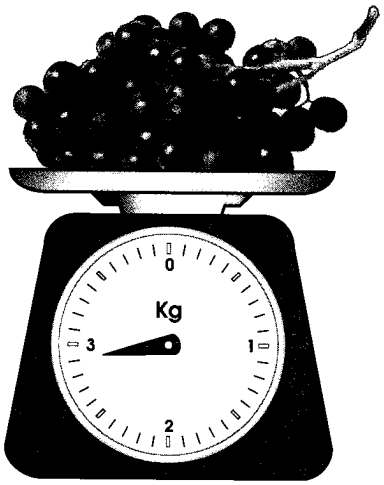
= ☐ tenths

3.



The total amount of water is ☐ *l*.

4.

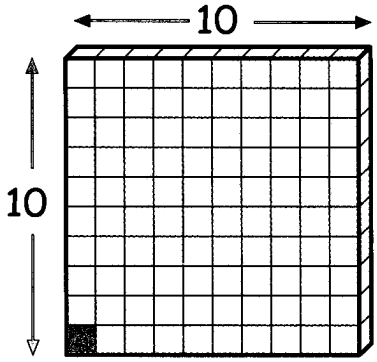


The total mass of the grapes is ☐ kg.

Worksheet 26

Let's Learn .. Hundredths

Divide one whole into 100 equal parts.



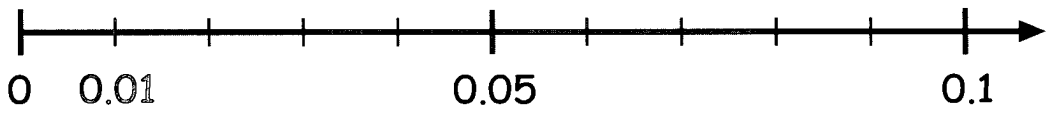
1 part = 1 hundredth

$= \frac{1}{100}$

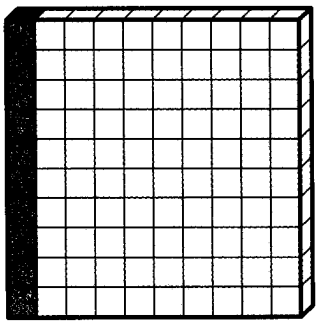
= 0.01

1 whole = 100 hundredths

Ones	Tenths	Hundredths
0	0	1



It is read as 'zero point zero one'.

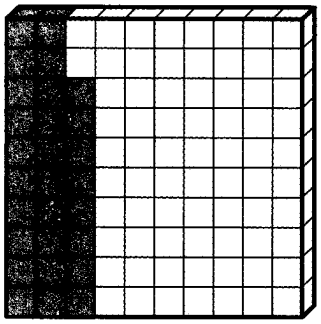


10 hundredths = $\frac{10}{100}$

$= \frac{1}{10}$

= 0.1

10 hundredths = 1 tenth

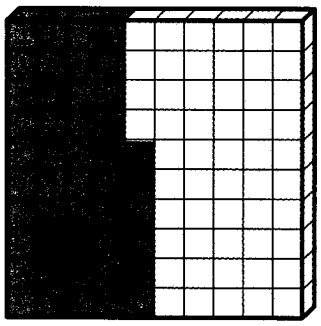
1. 

28 hundredths = 2 tenths + 8 hundredths

$$= \frac{2}{10} + \frac{8}{100}$$

$$= 0.28$$

Ones	Tenths	Hundredths
0	2	8

2. 

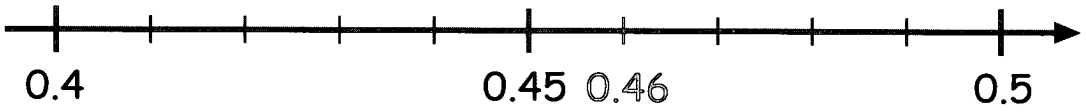
46 hundredths

= ☐ tenths + ☐ hundredths

$$= \frac{\square}{10} + \frac{\square}{100}$$

= ☐

Ones	Tenths	Hundredths
0		



Work in groups.
Think of some examples where decimals are used in our daily life. Compare your examples with those of other groups.

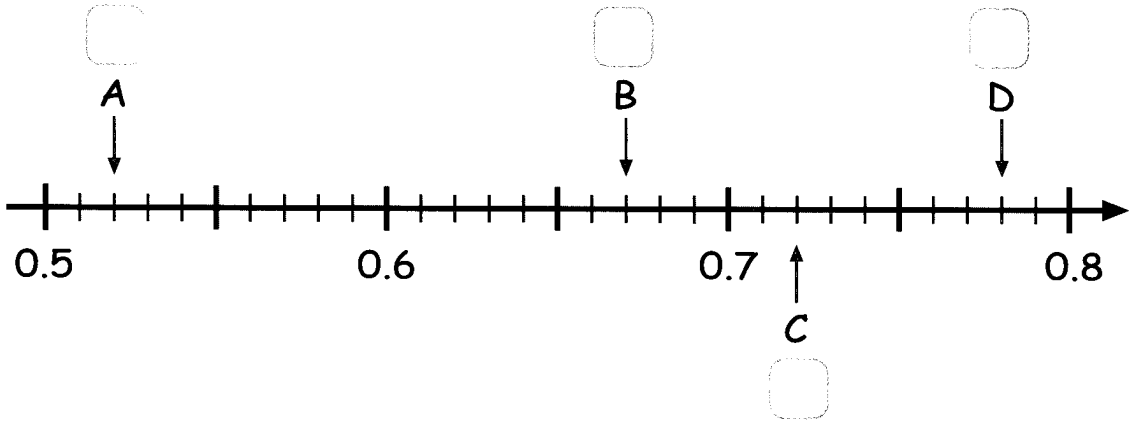
Let's Try .0. Hundredths

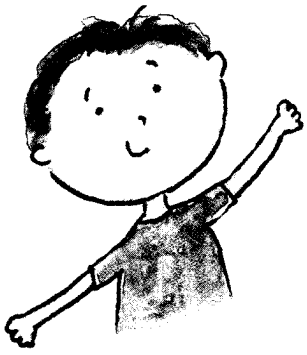
1. Express each of the following as a decimal.

   (a) $\frac{92}{100}$ = ☐

   (b) $2\frac{59}{100}$ = ☐

2. What is the decimal represented by each letter?

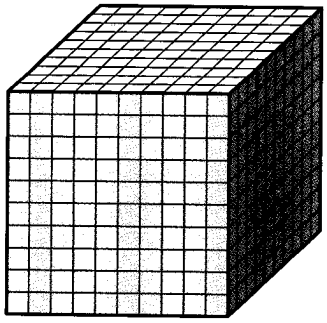




Worksheet 27

Let's Learn .0. Thousandths

Divide one whole into 1000 equal parts.



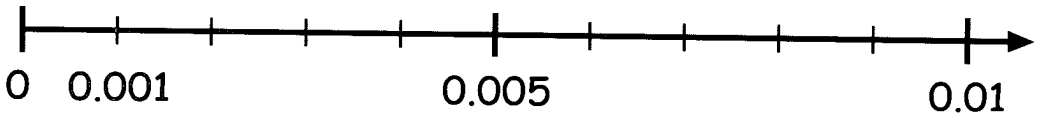
1 part = 1 thousandth

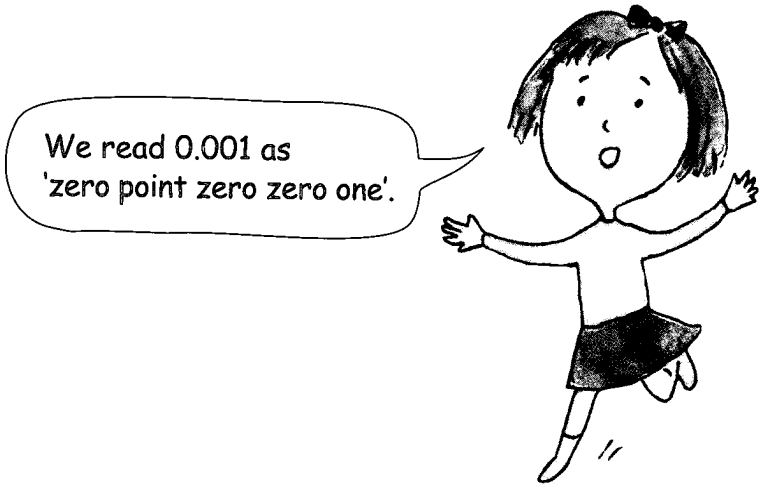
$$= \frac{1}{1000}$$

= 0.001

1 whole = 1000 thousandths

Ones	Tenths	Hundredths	Thousandths
0	0	0	1



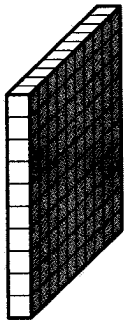


10 thousandths $= \frac{10}{1000}$

$= \frac{1}{100}$

= 1 hundredth

= 0.01

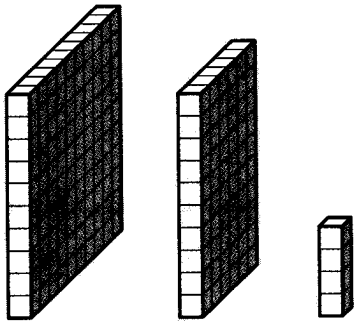


100 thousandths $= \frac{100}{1000}$

$= \frac{1}{10}$

= 1 tenth

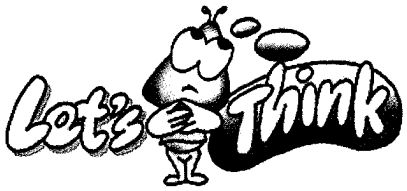
= 0.1



164 thousandths $= \frac{164}{1000}$

= 0.164

Ones	Tenths	Hundredths	Thousandths
0	1	6	4



Can you tell the difference between 0.5 and 0.50?

1. Write a decimal for each of the following:

(a)

Tens	Ones	Tenths	Hundredths	Thousandths
10 10 10 10			0.01 0.01	0.001 0.001 0.001 0.001 0.001 0.001

There are 4 tens, 2 hundredths and 6 thousandths.
It is 40.026.

(b)

Tens	Ones	Tenths	Hundredths	Thousandths
10 10 10 10 10	1 1 1 1	0.1 0.1 0.1		0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001

There are ☐ tens, ☐ ones, ☐ tenths, ☐ hundredths and ☐ thousandths.

It is ☐.

2. Look at the following chart.

Ones	Tenths	Hundredths	Thousandths
7	2	9	6

The number 7.296 has 3 decimal places.

The digit 2 is in the tenths place. It stands for 2 tenths or 0.2.

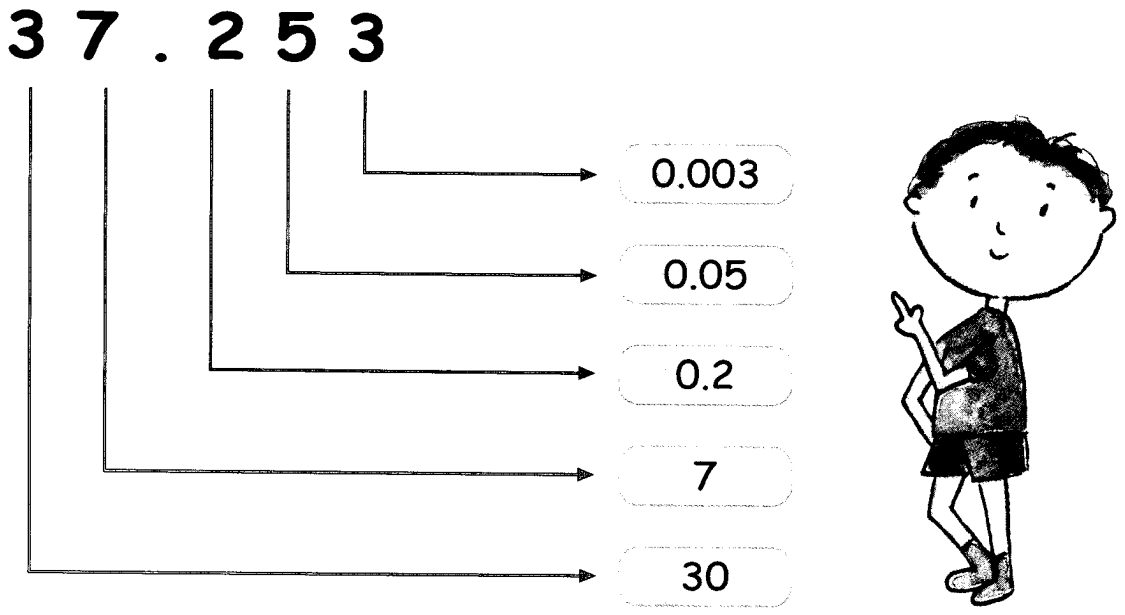
The digit 9 is in the hundredths place. It stands for 9 hundredths or 0.09.

The digit 6 is in the thousandths place. It stands for 6 thousandths or 0.006.

$$7.296 = 7 + \frac{2}{10} + \frac{9}{100} + \frac{6}{1000}$$

$$= 7 + 0.2 + 0.09 + 0.006$$

3. What value does each digit stand for in 37.253?



Thousandths

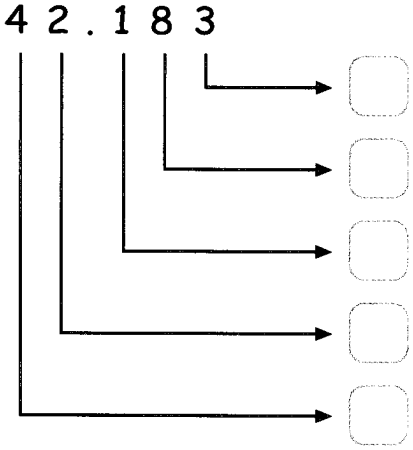
1. Write each of the following as a decimal.

   (a) 8 tenths (b) 19 hundredths (c) 125 thousandths

2. Write each of the following as a decimal.

   (a) $\frac{6}{10}$ (b) $\frac{36}{100}$ (c) $\frac{618}{1000}$

3. What is the value of each digit in 42.183?



4. Fill in the missing fractions.

   (a) $9.3 = 9 + \frac{\square}{\square}$ (b) $30.05 = 30 + \frac{\square}{\square}$

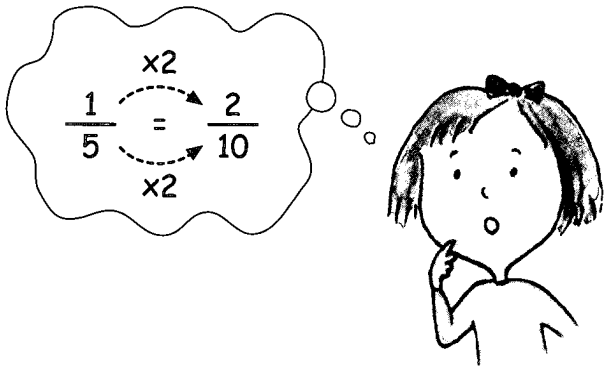
   (c) $21.315 = 20 + 1 + \frac{\square}{10} + \frac{\square}{100} + \frac{\square}{1000}$

Worksheet 28

Let's Learn ... Conversion between Fractions and Decimals

Converting Fractions to Decimals

1. Express $\frac{1}{5}$ as a decimal.

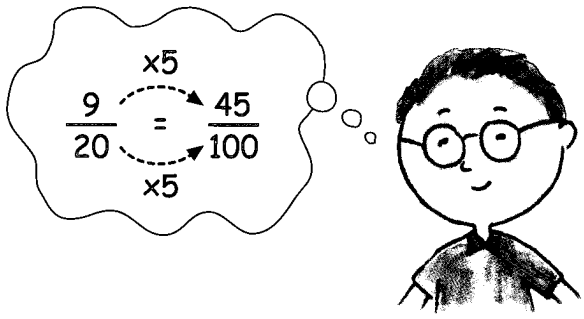


$$\frac{1}{5} = \frac{2}{10}$$

$$= 2 \text{ tenths}$$

$$= 0.2$$

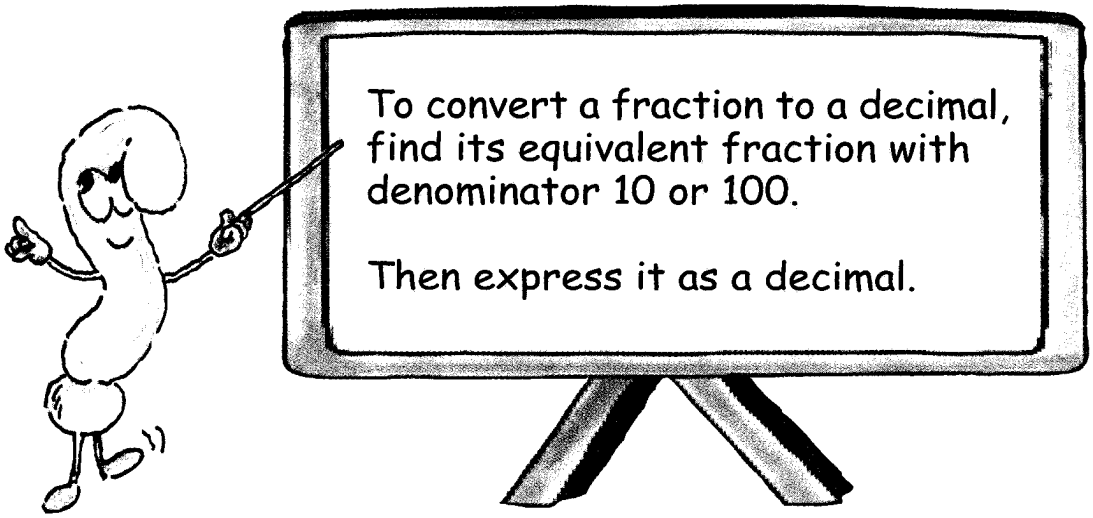
2. Express $\frac{9}{20}$ as a decimal.



$$\frac{9}{20} = \frac{45}{100}$$

$$= 45 \text{ hundredths}$$

$$= 0.45$$



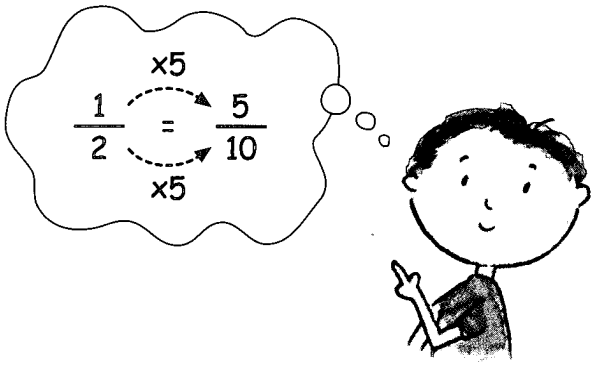
3. Express $1\frac{1}{2}$ as a decimal.

$1\frac{1}{2} = 1 + \frac{1}{2}$

$= 1 + \frac{5}{10}$

$= 1 + 0.5$

$= 1.5$



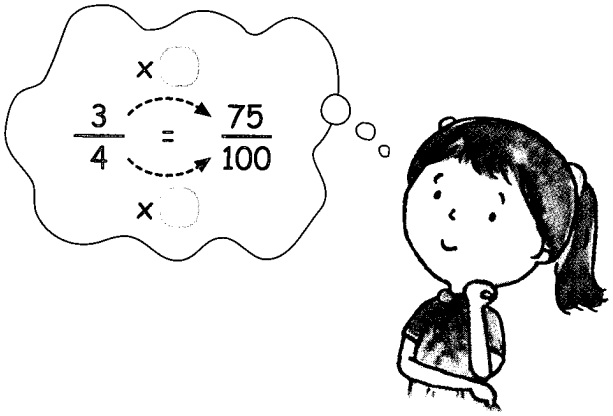
4. Express $2\frac{3}{4}$ as a decimal.

$2\frac{3}{4} = 2 + \frac{3}{4}$

$= 2 + \frac{\square}{\square}$

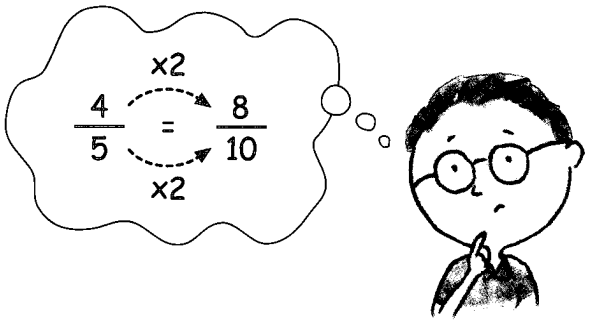
$= 2 + \square$

$= \square$



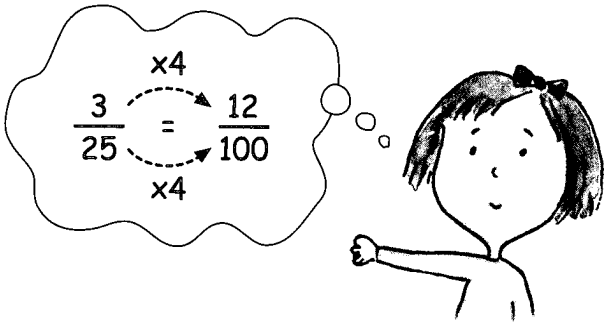
5. Express $\frac{4}{5}$ as a decimal.

$\frac{4}{5} = \frac{\square}{10} = \square$



6. Express $\frac{3}{25}$ as a decimal.

$\frac{3}{25} = \frac{\square}{\square} = \square$



Converting Decimals to Fractions

1. Express 0.6 as a fraction.

   0.6 = 6 tenths

   $= \frac{6}{10}$

   $= \frac{3}{5}$ (simplest form)

2. Express 0.35 as a fraction.

   0.35 = 35 hundredths

   $= \frac{35}{100}$

   $= \frac{7}{20}$ (simplest form)

3. Express 0.629 as a fraction.

   0.629 = 629 thousandths

   $= \frac{629}{1000}$

4. Express 3.25 as a fraction.

   3.25 = 3 ones + 25 hundredths

   $= 3 + \frac{25}{100}$

   $= 3\frac{25}{100}$

   $= 3\frac{1}{4}$ (simplest form)

Conversion between Fractions and Decimals

1. Express each of the following fractions as a decimal.

(a) $\frac{3}{5}$ (b) $\frac{9}{25}$ (c) $\frac{3}{20}$

(d) $2\frac{1}{4}$ (e) $3\frac{1}{5}$ (f) $5\frac{23}{50}$

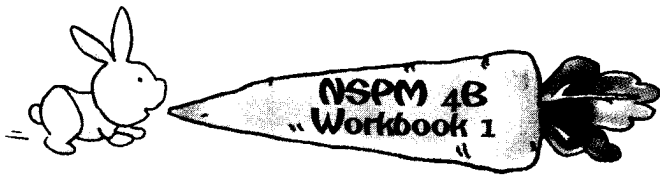
(g) $3\frac{7}{20}$ (h) $4\frac{11}{25}$ (i) $6\frac{9}{50}$

2. Express each of the following decimals as a fraction in its simplest form.

(a) 0.09

(b) 0.246

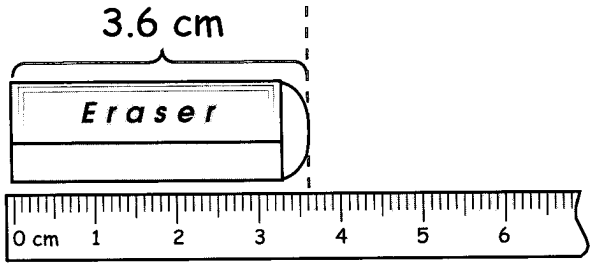
(c) 8.051

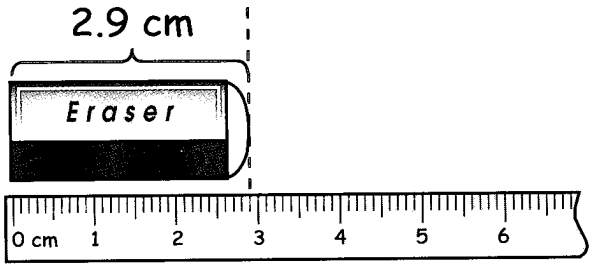


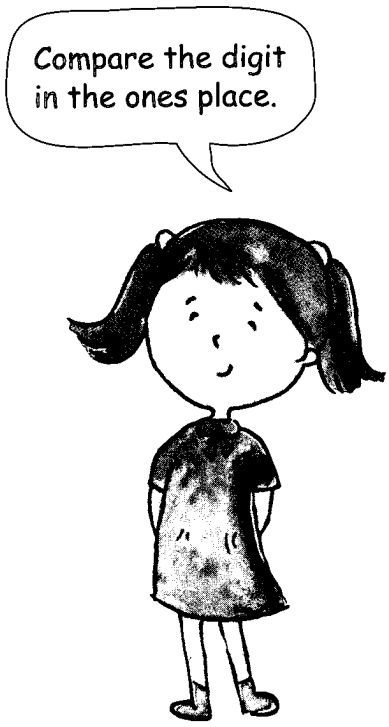
Worksheet 29

Let's Learn .. Comparing and Ordering Decimals

1. Is the pink eraser or the green eraser longer?





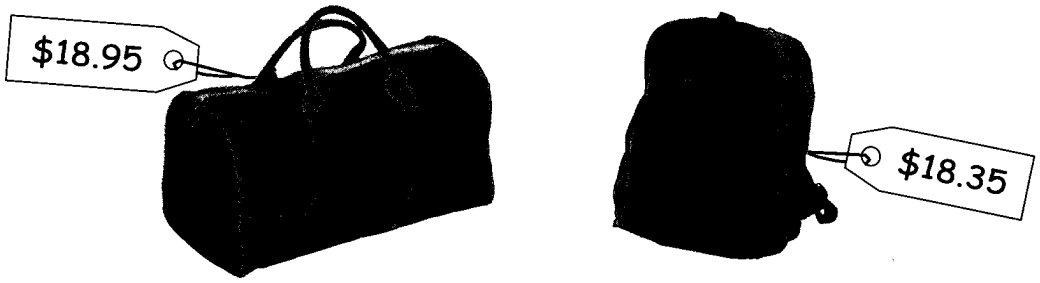


Ones	Tenths	
3	6	3.6
2	9	2.9

3 is greater than 2.
3.6 is greater than 2.9.

The pink eraser is longer than the green eraser.

2. Which bag costs more, the red bag or the blue bag?



Tens	Ones	Tenths	Hundredths	
1	8	9	5	18.95
1	8	3	5	18.35

18.95 is greater than 18.35.
The red bag costs more.

3. Which is smaller, 432.381 or 432.388?

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	
4	3	2	3	8	1	432.381
4	3	2	3	8	8	432.388

Compare the digit in the thousandths place.

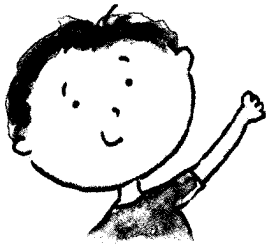
[ ] is smaller than [ ].

So [ ] is smaller than [ ].

4. Arrange the decimals shown below in increasing order.

14.273 14.326 14.275

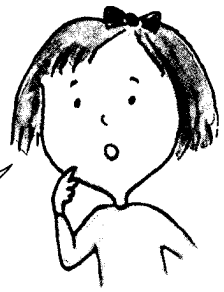
Tens	Ones	Tenths	Hundredths	Thousandths
1	4	2	7	3
1	4	3	2	6
1	4	2	7	5



All three decimals have the same digits in the tens and the ones places.
Compare the digit in the tenths place.

3 is greater than 2.
14.326 is the greatest.

Now, compare 14.275 and 14.273.



The digits in the tenths and the hundredths places are the same.
Compare the digit in the thousandths place.

3 is smaller than 5.
So, 14.273 is the smallest.

The order from the smallest to the greatest is 14.273, 14.275, 14.326.

Comparing and Ordering Decimals

1. Which is greater, 169.71 or 169.64?

Hundreds	Tens	Ones	Tenths	Hundredths
1	6	9	7	1
1	6	9	6	4

2. Which is smaller?

   (a) 0.8 or 0.2

   (b) 9.3 or 9.65

   (c) 11.732 or 11.737

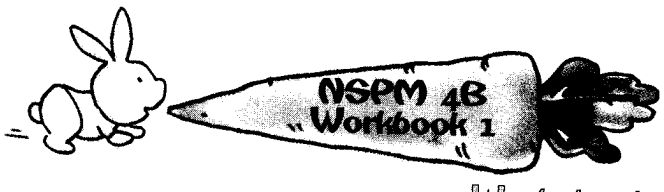
   (d) 48.323 or 48.321

3. Arrange each set in decreasing order.

   (a) 9.932, 9.392, 9.3, 9.923

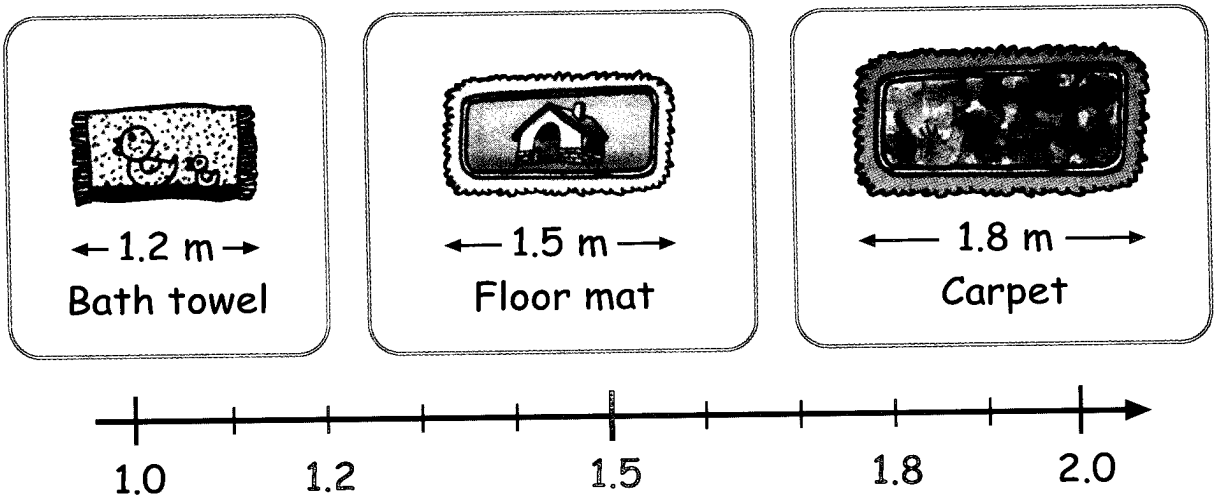
   (b) 5.39, 5.309, 5.369, 5.936

   (c) 23.692, 23.899, 23.869, 21.095



Let's Learn .. Rounding Off Decimals

Rounding Off to the Nearest Whole Number



To round off a decimal to the nearest whole number, we look at the digit in the tenths place.

1.2 is closer to 1 than 2. We round off 1.2 to 1. $1.2 \approx 1$

1.8 is closer to 2 than 1. We round off 1.8 to 2. $1.8 \approx 2$

We round off 1.5 to 2. $1.5 \approx 2$

1. Round off the following to the nearest dollar.

(a) 

$49.75

$ ☐

(b) 

$12.45

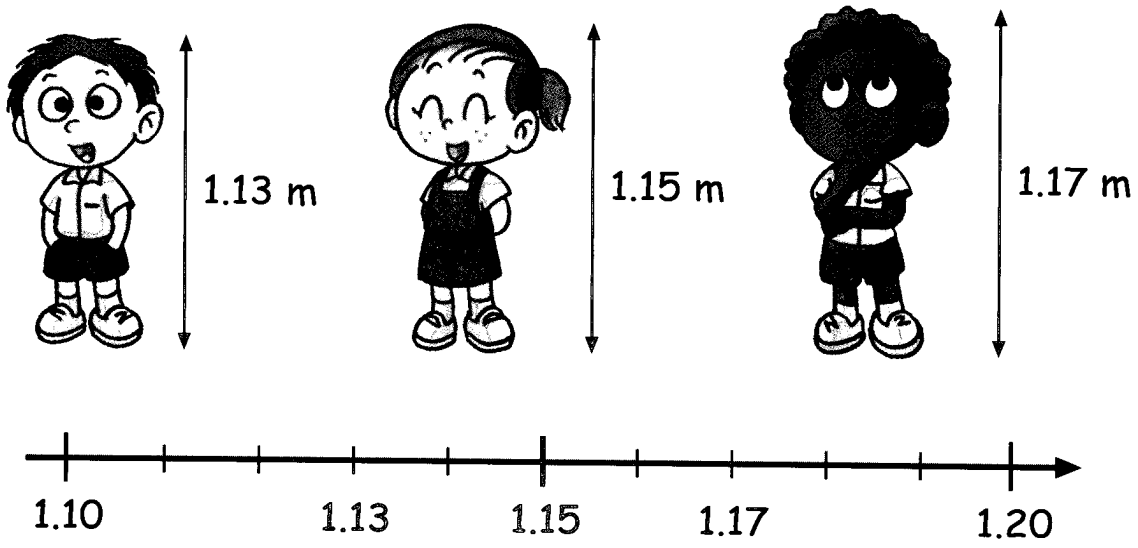
$ ☐

(c) 

$86.50

$ ☐

Rounding Off to 1 Decimal Place

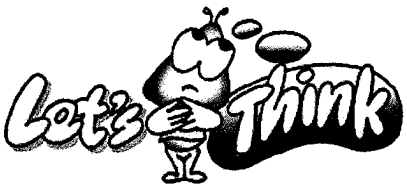


To round off a decimal to 1 decimal place,
we look at the digit in the hundredths place.

1.13 is closer to 1.1. We round off 1.13 to 1.1. $1.13 \approx 1.1$

1.17 is closer to 1.2. We round off 1.17 to 1.2. $1.17 \approx 1.2$

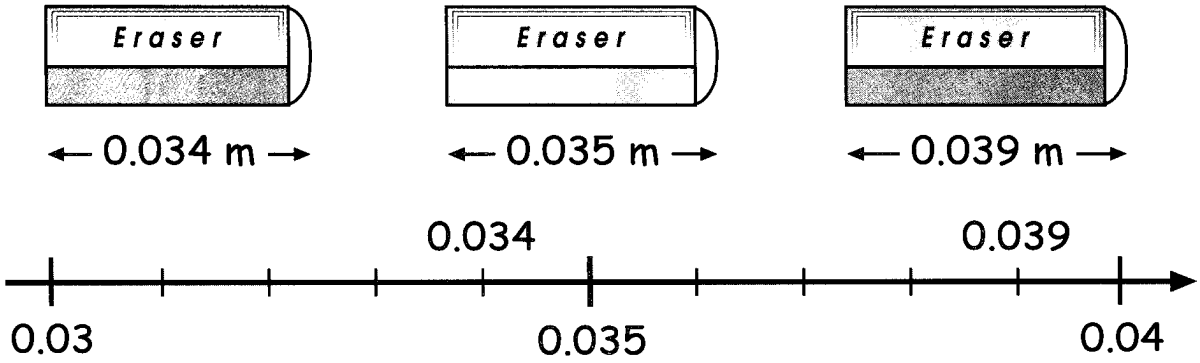
We round off 1.15 to 1.2. $1.15 \approx 1.2$



Work in pairs and try to solve the following:

A number has 2 decimal places. It is 7.3 when rounded off to 1 decimal place. What is the greatest and smallest possible value of the number?

Rounding Off to 2 Decimal Places



To round off a decimal to 2 decimal places,
we look at the digit in the thousandths place.

0.034 is closer to 0.03.
We round off 0.034 to 0.03. $0.034 \approx 0.03$

0.039 is closer to 0.04.
We round off 0.039 to 0.04. $0.039 \approx 0.04$

We round off 0.035 to 0.04. $0.035 \approx 0.04$

1. Round off the following to 2 decimal places.

   (a) 1.124 ≈ ☐

   (b) 1.645 ≈ ☐

   (c) 5.276 ≈ ☐

2. Round off 62.358 to

   (a) the nearest whole number ☐

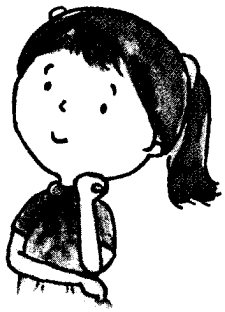
   (b) 1 decimal place ☐

   (c) 2 decimal places ☐

Work in pairs.

(a) Measure the following items located in the classroom using a measuring tape. Record the measurements and express them in m.

1. Length of your desk
2. Length of your teacher's desk
3. Width of the whiteboard
4. Length of the windows



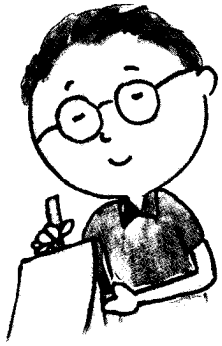
Round off your results to the nearest m.

(b) Measure the following items using your ruler. Record the measurements and express them in m.

1. Width of your Maths textbook
2. Width of your diary or notebook
3. Length of your pen
4. Length of your file

Round off your results to 1 decimal place.

Rounding Off Decimals



1. Round off 3.695 to

   (a) the nearest whole number.

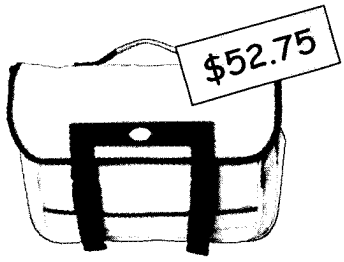
   (b) 1 decimal place.

   (c) 2 decimal places.

2. Peter's mass is 38.3 kg and Kelvin's mass is 40.8 kg. Round off each boy's mass to the nearest kg.

3. Rani bought two pieces of ribbon. One piece is 2.15 m long and the other piece is 8.34 m long. Round off each length to 1 decimal place.

4. Peter bought a bag which costs $52.75. Round off the cost of the bag to the nearest dollar.



5. The capacity of a glass is 0.215 *l*. Round off the capacity to 2 decimal places.

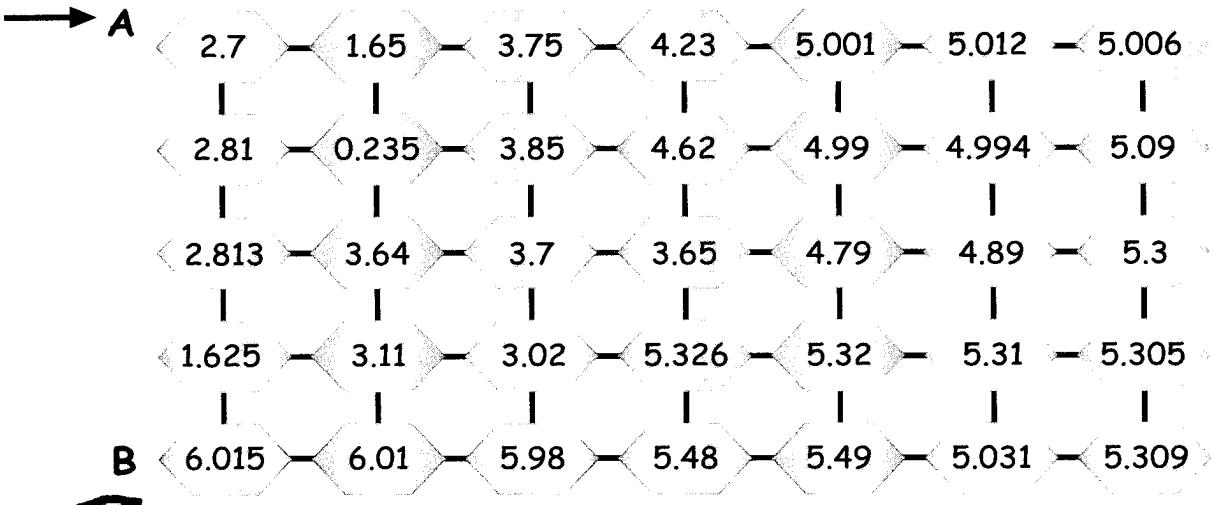
Worksheet 31
Practice 8

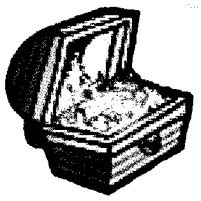
Fun with Maths

Trace the path of decimals in an increasing order starting from A to the treasure at B.

There may be more than one choices for a number. If you choose the wrong one, you may end up with no where to go. In this case, move backwards and find another path.

See who can reach the treasure first.





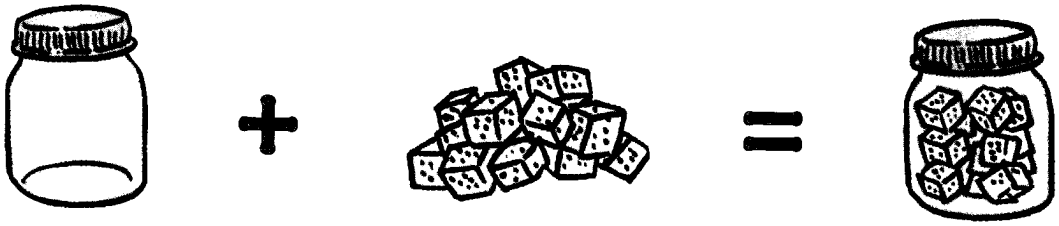
9 Decimals (II)

Do You Know?

How much change did Mary's mother receive if she gave a $100 note to the cashier?

Let's Learn .•. Addition of Decimals

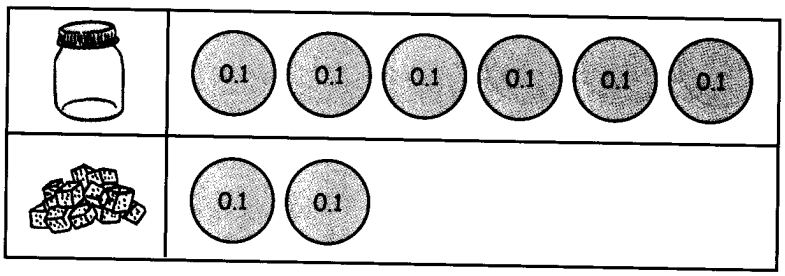
1. The mass of an empty jar is 0.6 kg. What is the total mass of the jar and 0.2 kg of sugar cubes?

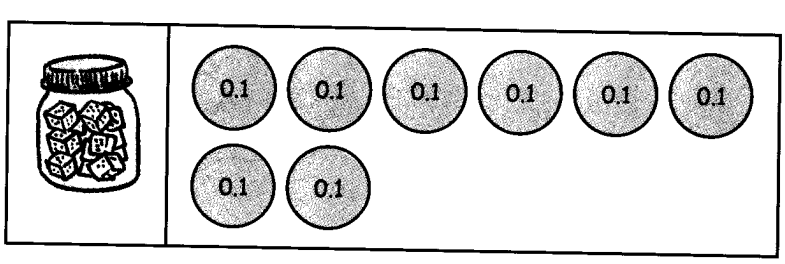


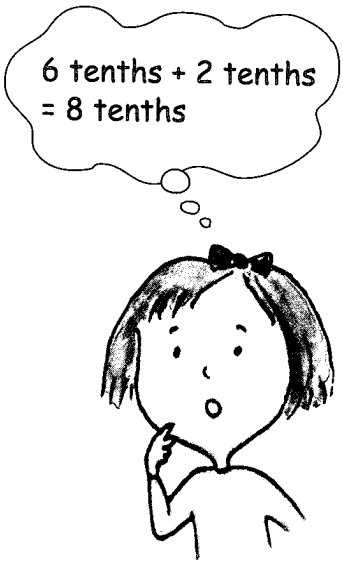
Empty jar
0.6 kg

Sugar cubes
0.2 kg

? kg





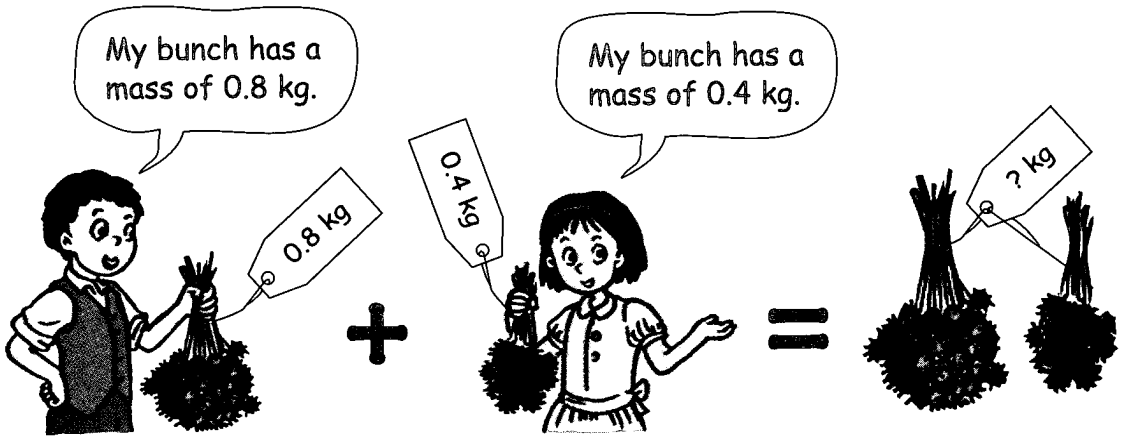


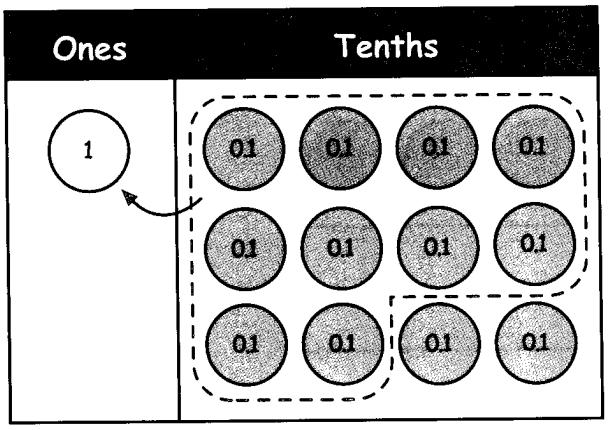
$0.6 + 0.2 = 0.8$

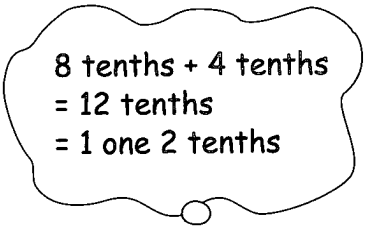
$$\begin{array}{r} 0.6 \\ +\ 0.2 \\ \hline 0.8 \end{array}$$

The total mass of the jar and the sugar cubes is 0.8 kg.

2. What is the total mass of the two bunches of rambutans?

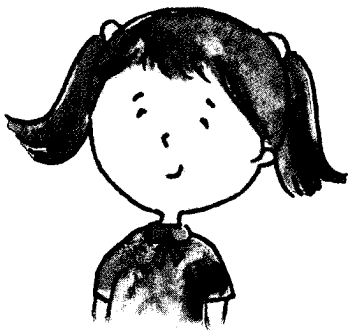






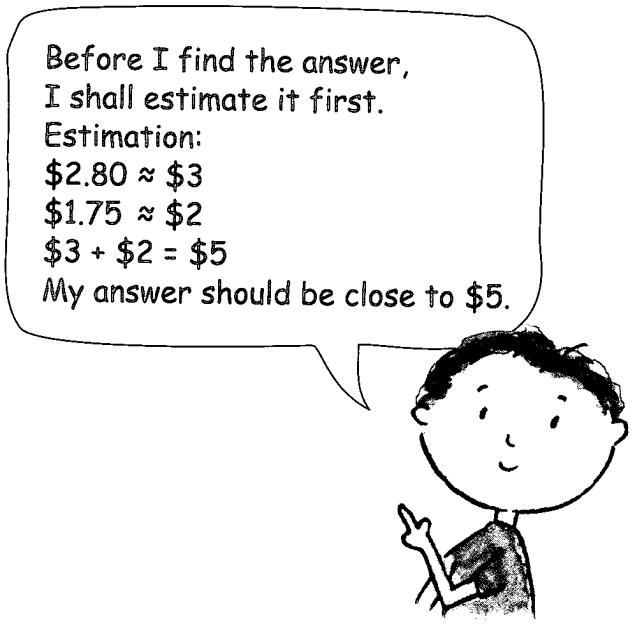
$0.8 + 0.4 = 1.2$

$$\begin{array}{r} {}^{1}0 \;.\; 8 \\ +\; 0 \;.\; 4 \\ \hline 1 \;.\; 2 \end{array}$$



The total mass of the two bunches of rambutans is 1.2 kg.

3. What is the total cost of the pen and the sharpener?



$$\begin{array}{r} \$\ {}^{1}2\ .\ 8\ 0 \\ +\ \$\ 1\ .\ 7\ 5 \\ \hline \$\ 4\ .\ 5\ 5 \end{array}$$

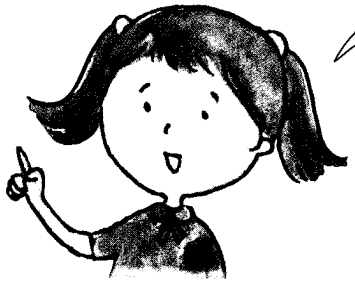
Step 1: Align the decimal point.

Step 2: Add the hundredths.

Step 3: Add the tenths.

Step 4: Add the ones.

$2.80 + $1.75 = $4.55



The total cost of the pen and the sharpener is $4.55.

4. What is the total cost of the doll and dress?

$$\begin{array}{r} \$\ 1\ 5\ .\ 6\ 0 \\ +\ \$\ 2\ 9\ .\ 9\ 0 \\ \hline \square\square.\square\square \end{array}$$

Step 1: Align the decimal point.

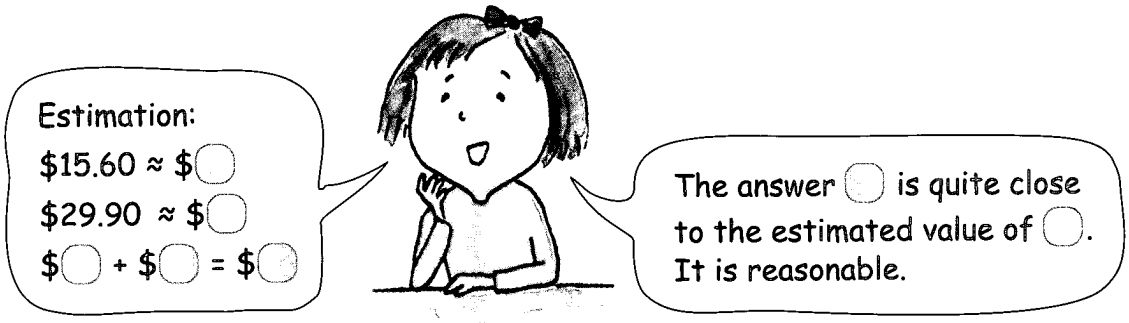
Step 2: Add the hundredths.

Step 3: Add the tenths.

Step 4: Add the ones.

Step 5: Add the tens.

$15.60 + $29.90 = $ ☐



The total cost is $ ☐ .

5. Jane bought 12.45 m of white lace and 11.85 m of red lace. How much lace did she buy altogether? Round off your answer to the nearest whole number.

$$\begin{array}{r} {}^{1}1\ {}^{1}2\ .\ {}^{1}4\ 5 \\ +\ 1\ 1\ .\ 8\ 5 \\ \hline 2\ 4\ .\ 3\ 0 \end{array}$$

Step 1: Align the decimal point.

Step 2: Add the hundredths.

Step 3: Add the tenths.

Step 4: Add the ones.

Step 5: Add the tens.

$12.45 + 11.85 = 24.3$

$24.3 \approx 24$

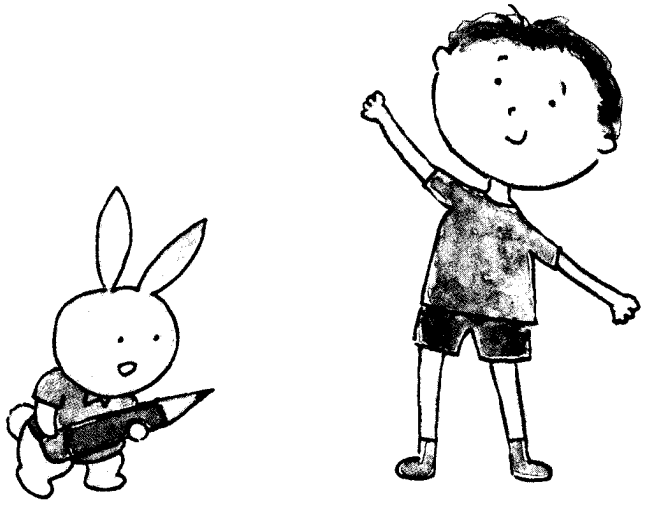
Jane bought 24.3 m of lace altogether.
It is about 24 m.

In groups of 4, you are to prepare breakfast, lunch and dinner for 4 children. The budget for each meal for 4 children is $10.00.

Bring some price lists from different supermarkets to class.

Discuss with your team members what items to buy for each meal. Remember that you should not spend more than $30.00 for the 3 meals and you must prepare healthy food for the children.

Report to your class the ingredients needed for the preparation of your meals and the class will decide which group prepares the healthiest meals.



Addition of Decimals

1. Add the following.

(a) 2.63 + 8.59

(b) 29.75 + 32.60

(c) 28.09 + 3.65

(d) 98.65 + 8.69

2. Peter is 1.28 m tall. John is 0.45 m taller than Peter. How tall is John?

3. Zoe spent $19.75 on a skirt. She spent $24.35 more on a dress than the skirt. How much did she spend in all?

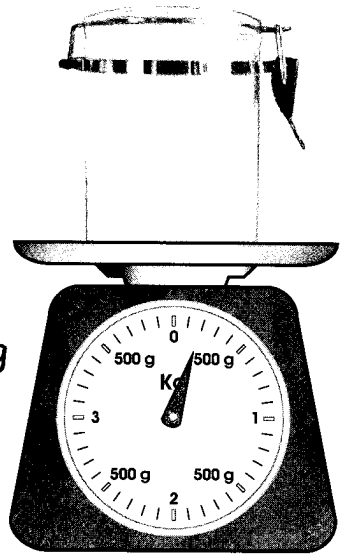
4. Peter paid $2.95 for a pen, $6.85 for a pair of slippers and $25.30 for a bag. How much did he spend altogether?

5. Sean mixes 8.15 kg of cement, 2.65 kg of sand and 10.45 kg of granite. What is the total mass of the mixture? Round off your answer to 1 decimal place.

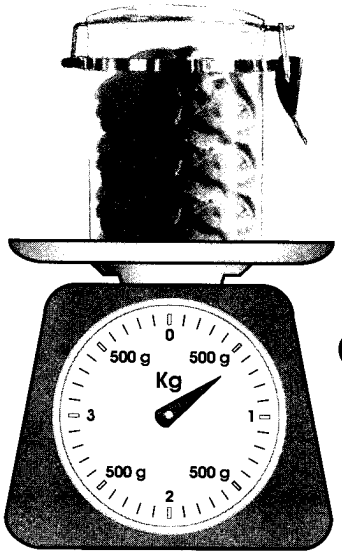
Worksheet 32

Let's Learn .•. Subtraction of Decimals

1.

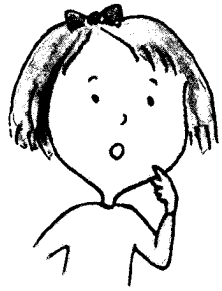


0.2 kg

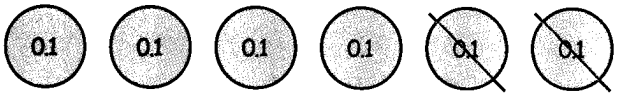


0.6 kg

What is the mass of the cookies?



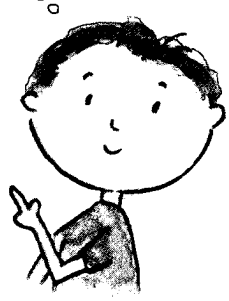
Total mass of the container and cookies = 0.6 kg
Mass of container = 0.2 kg
Mass of cookies = ?



6 tenths - 2 tenths
= 4 tenths

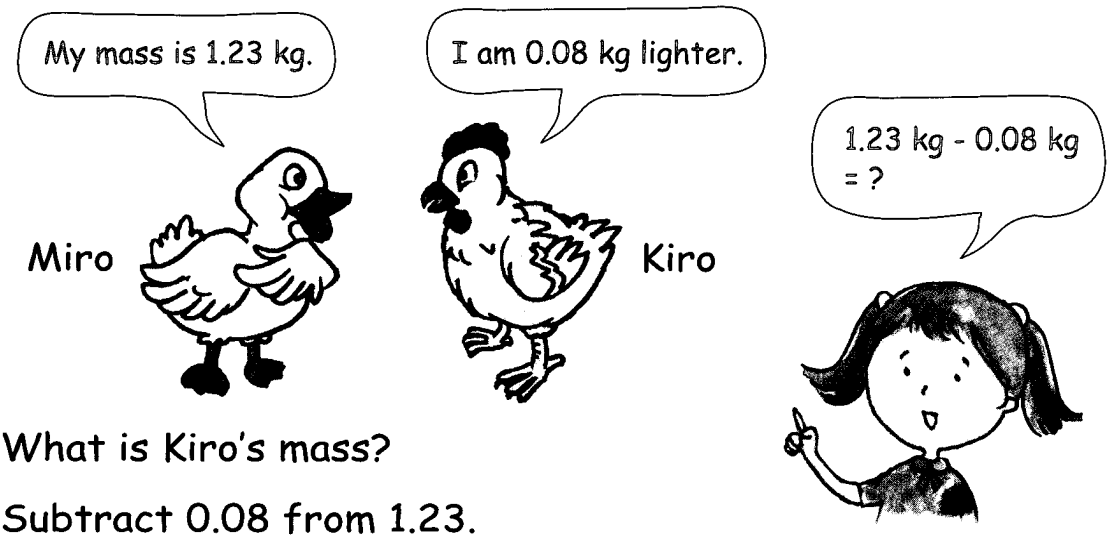
0.6 - 0.2 = 0.4

$$\begin{array}{r} 0.6 \\ -\ 0.2 \\ \hline 0.4 \end{array}$$



The mass of the cookies is 0.4 kg.

2.



What is Kiro's mass?

Subtract 0.08 from 1.23.

Ones	Tenths	Hundredths
1	0.1 0.1	0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01

1 tenth = 10 hundredths
13 hundredths – 8 hundredths = 5 hundredths

$$\begin{array}{r} 1\ .\ \overset{1}{\cancel{2}}\ \overset{13}{\cancel{3}} \\ -\ 0\ .\ 0\ 8 \\ \hline 1\ .\ 1\ 5 \end{array}$$

Step 1: Align the decimal point.

Step 2: Subtract the hundredths.

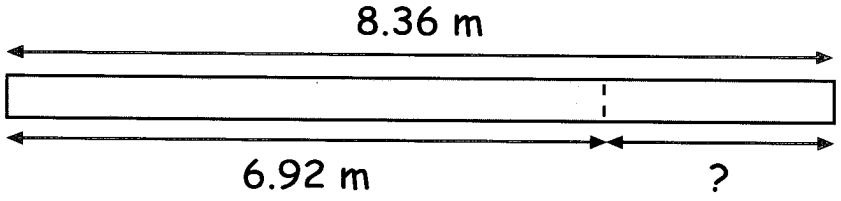
Step 3: Subtract the tenths.

Step 4: Subtract the ones.

1.23 – 0.08 = 1.15

Kiro's mass is 1.15 kg.

3. Maria had a ribbon 8.36 m long. She used 6.92 m of it. How much ribbon had she left?



$$\begin{array}{r} 8.36 \\ -\ 6.92 \\ \hline \square.\square\square \end{array}$$

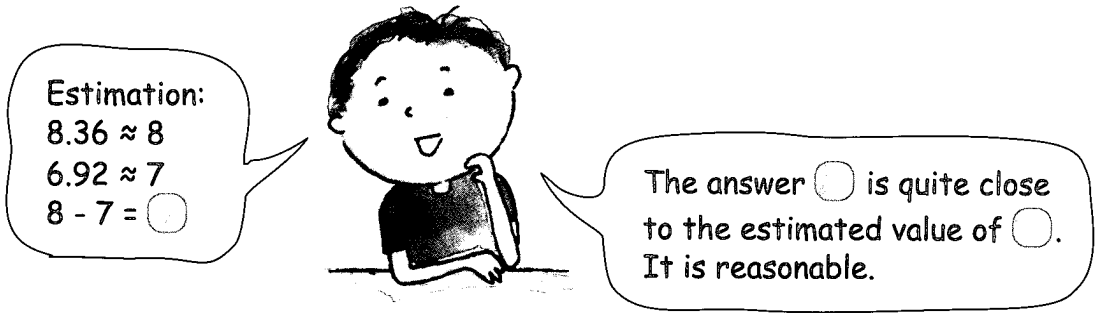
Step 1: Align the decimal point.

Step 2: Subtract the hundredths.

Step 3: Subtract the tenths.

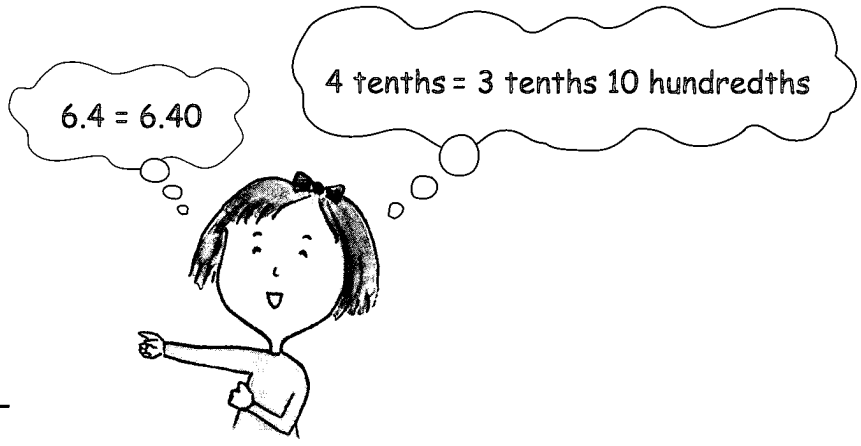
Step 4: Subtract the ones.

8.36 - 6.92 = ☐



Maria had ☐ m of ribbon left.

4. Subtract 2.19 from 6.4.



$$\begin{array}{r} 6\ .\ {}^{3}\cancel{4}\ {}^{10}0 \\ -\ 2\ .\ 1\ 9 \\ \hline \square\ .\ \square\ \square \end{array}$$

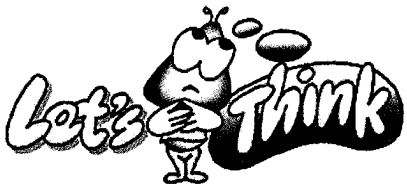
Step 1: Align the decimal point.

Step 2: Subtract the hundredths.

Step 3: Subtract the tenths.

Step 4: Subtract the ones.

6.4 – 2.19 = ☐



Find 3.5 – 0.27.
John's working is shown below. Was his result correct?
If not, find the place where he made a mistake.

$$\begin{array}{r} {}^{2}\cancel{3}\ .\ {}^{15}\cancel{5} \\ -\ 0\ .\ 2\quad 7 \\ \hline 0\ .\ 0\quad 8 \end{array}$$

Subtraction of Decimals

1. Do the following.

   (a) 2.2 - 1.8 (b) 2 - 1.49

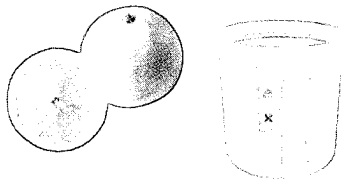
   (c) 3.5 - 1.7 (d) 16.09 - 5.69

   (e) 2.41 - 1.05 (f) 25.8 - 15.93

2. Mary bought a bottle of orange juice for $5.35. She gave a $10 note to the cashier. How much change did Mary receive?

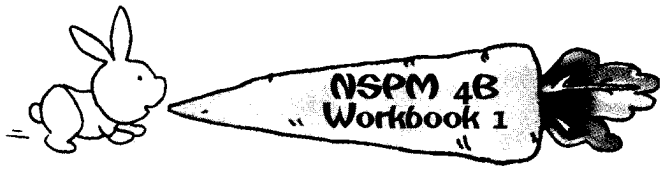
3. Ali has a mass of 32.7 kg now. He gained 10.9 kg over the last three years. What was his mass three years ago?

4. Ravi mixed some carrot juice with 2.27 *l* of orange juice. If the total volume of the mixture was 3.12 *l*, how much carrot juice did he mix?



5. Peter cycled 12.85 km and Ahmad cycled 9.67 km. How many more kilometres did Peter cycle than Ahmad? Round off your answer to the nearest whole number.

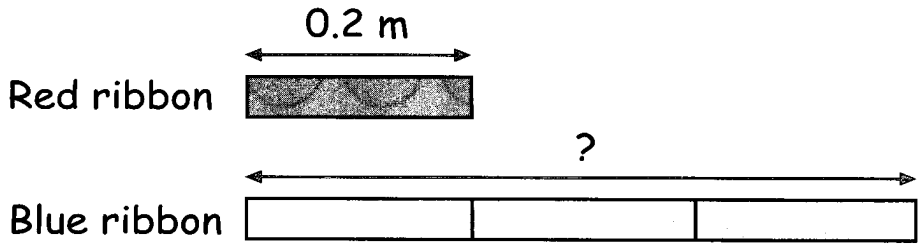
6. Peter drank 1.25 *l* of milk and his brother drank 1.45 *l*. How many more litres of milk did Peter's brother drink?
   Check your answer by estimation.



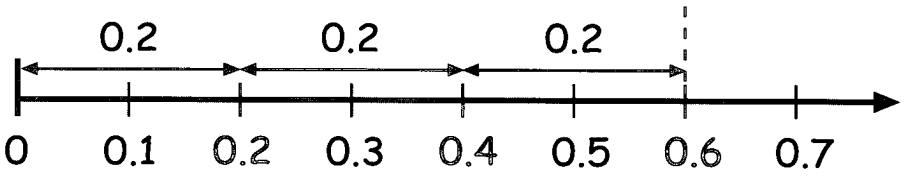
Worksheet 33

Let's Learn .•. Multiplication of Decimals

1. A red ribbon is 0.2 m long. A blue ribbon is 3 times as long as the red ribbon. How long is the blue ribbon?



Multiply 0.2 by 3.



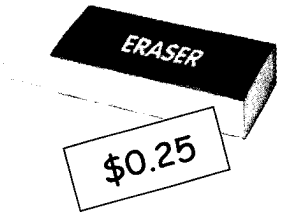
$0.2 \times 3 = 0.2 + 0.2 + 0.2 = 0.6$

Tenths	
0.1	0.1
0.1	0.1
0.1	0.1

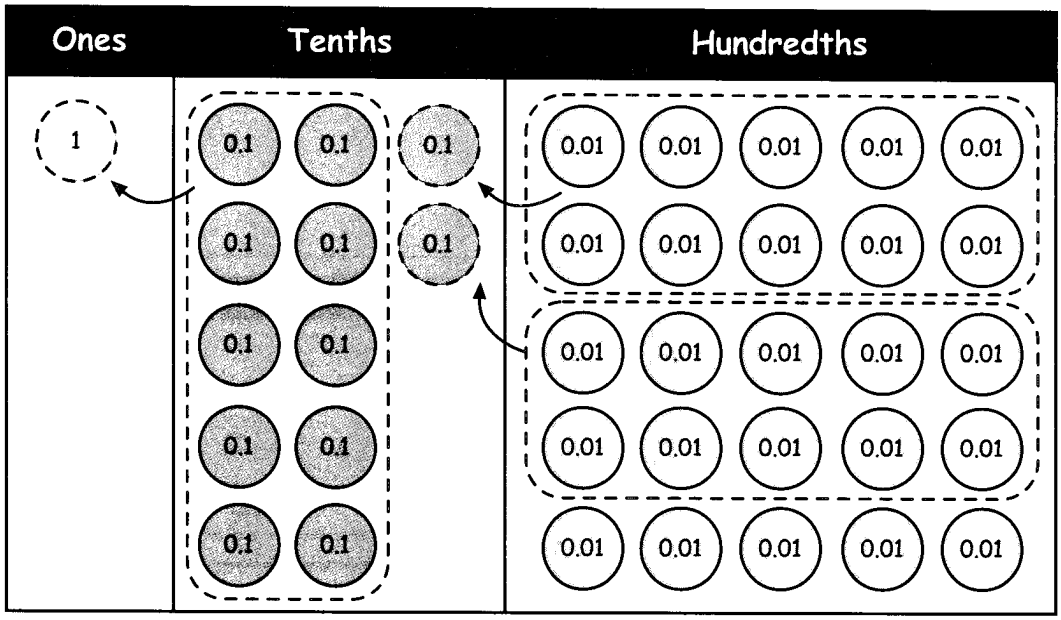
$$\begin{array}{r} 0.2 \\ \times \quad 3 \\ \hline 0.6 \end{array}$$

The blue ribbon is 0.6 m long.

2. An eraser costs $0.25. How much would 5 such identical erasers cost? Round off your answer to the nearest dollar.



Multiply $0.25 by 5.



$$\begin{array}{r} \$\ {}^{1}0\ .\ {}^{2}2\ 5 \\ \times \qquad\quad 5 \\ \hline \$\ 1\ .\ 2\ 5 \end{array}$$

Step 1: Multiply the hundredths.

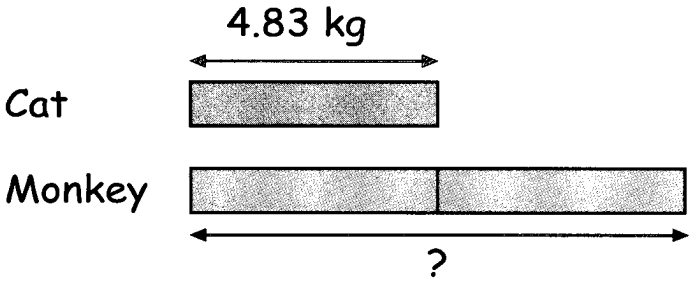
Step 2: Multiply the tenths.

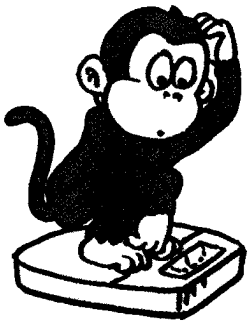
Step 3: Multiply the ones.

$0.25 x 5 = $1.25
≈ $1

5 erasers cost about $1.

3. The mass of a monkey is twice the mass of a cat.
What is the mass of the monkey?





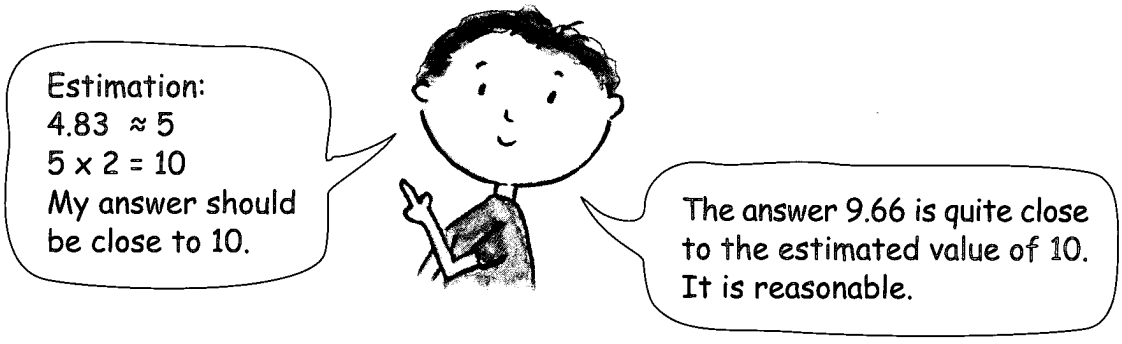
Multiply 4.83 by 2.

$$\begin{array}{r} {}^{1}4.83 \\ \times \quad\quad 2 \\ \hline 9.66 \end{array}$$

Step 1: Multiply the hundredths.

Step 2: Multiply the tenths.

Step 3: Multiply the ones.



The mass of the monkey is 9.66 kg.

4. Do the multiplication and then check if your result is reasonable.

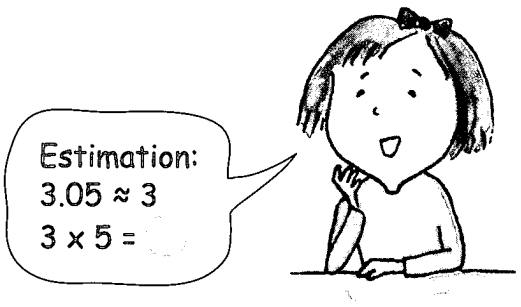
$$\begin{array}{r} 3.05 \\ \times \quad\quad 5 \\ \hline \end{array}$$

Step 1: Multiply the hundredths.

Step 2: Multiply the tenths.

Step 3: Multiply the ones.

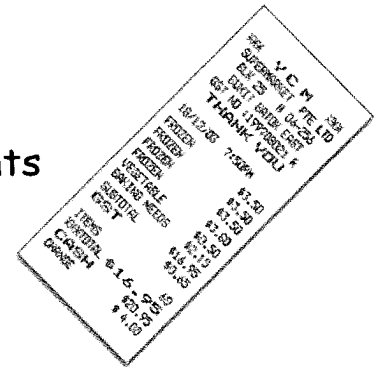
$3.05 \times 5 =$



The answer is close to the estimated value of .

It is reasonable.

Get a receipt of groceries from your parents and check if the cashier has given your parents the correct change.



Multiplication of Decimals

1. Multiply the following.

   (a) 7.5 x 6

   (b) 6.49 x 8

   (c) 8.26 x 9

   (d) 18.39 x 7

   (e) 10.25 x 8

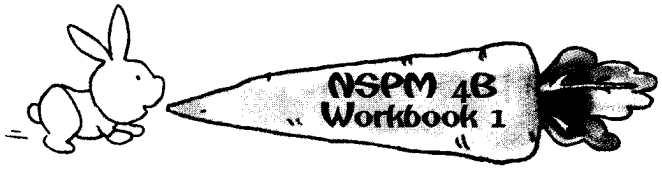
   (f) 24.68 x 9

2. Joyce bought 4 packets of spices. Each packet had a mass of 0.25 kg. What was the total mass of the 4 packets of spices?

3. Ann uses 0.75 *l* of cordial to make a jug of juice. How much cordial does she need to make 7 jugs of juice? Round off your answer to the nearest *l*.

4. Mr Lim works 7 hours a day. He is paid $12.35 each hour. How much does he earn in a day? Check your answer by estimation.

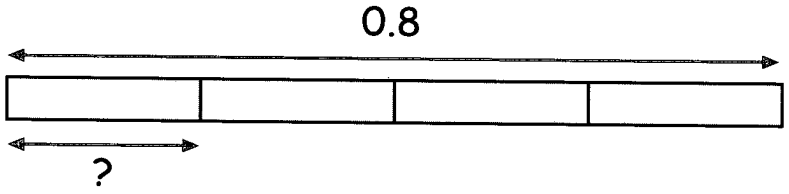
5. Siti bought 8 books at $32.85 each. How much money did Siti pay for them altogether?

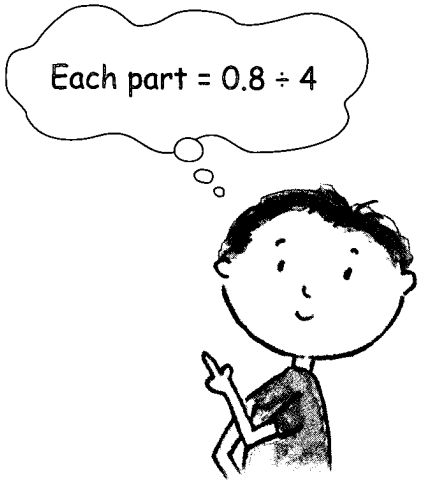


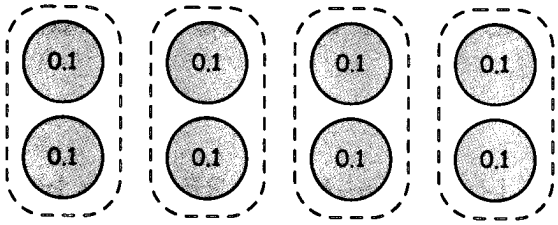
Worksheet 34

Let's Learn .•. Division of Decimals

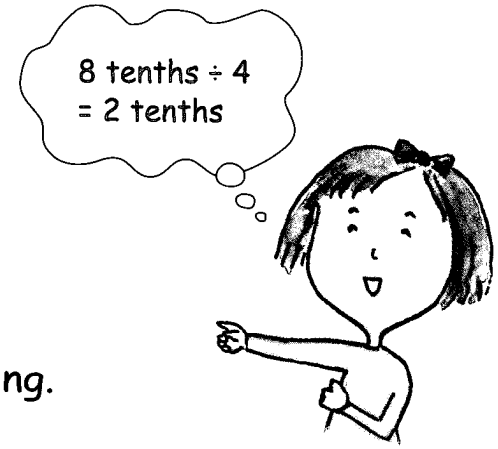
1. Peter cuts a ribbon of length 0.8 m into 4 equal parts. How long is each part?







$$
\begin{array}{r}
0.2 \\
4\overline{)\,0.8} \\
-\,08 \\
\hline
0
\end{array}
$$

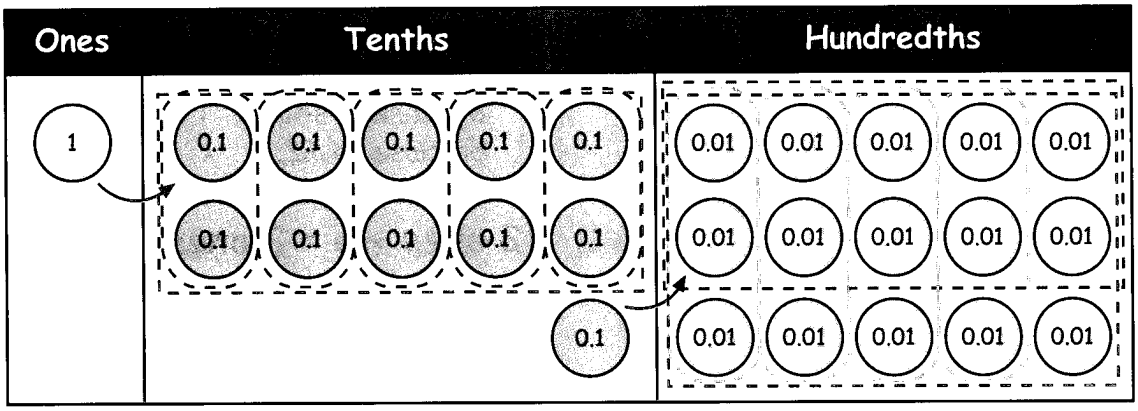


$0.8 \div 4 = 0.2$

Each part of the ribbon is 0.2 m long.

2. The total mass of 5 identical tennis balls is 1.15 kg. What is the mass of 1 tennis ball?

$1.15 \div 5 =$



$$
\begin{array}{r}
0.2 \\
5\overline{)1.15} \\
-10 \\
\hline
1
\end{array}
$$

Step 1: 1 one = 10 tenths
10 tenths + 1 tenth = 11 tenths
11 tenths ÷ 5
= 2 tenths with remainder 1 tenth

$$
\begin{array}{r}
0.23 \\
5\overline{)1.15} \\
-10 \\
\hline
1\ 5 \\
-1\ 5 \\
\hline
0
\end{array}
$$

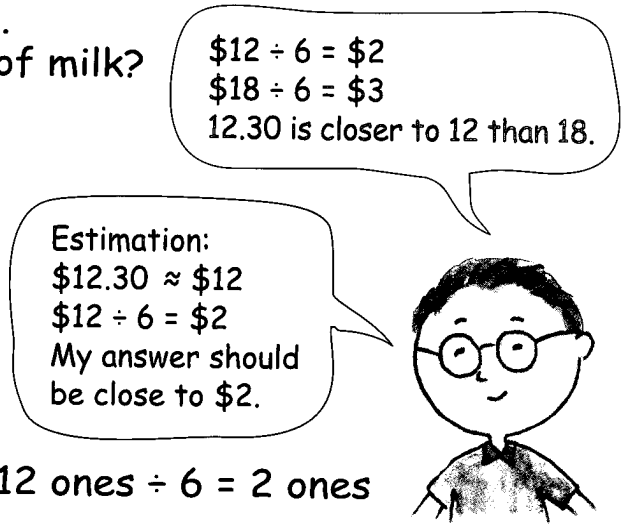
Step 2: 1 tenth = 10 hundredths
10 hundredths + 5 hundredths
= 15 hundredths
15 hundredths ÷ 5
= 3 hundredths

$1.15 \div 5 = 0.23$

The mass of 1 tennis ball is 0.23 kg.

3. 6 litres of milk cost $12.30.
What is the cost of 1 litre of milk?

$12.30 ÷ 6 =




```
   $  2  .
6 ) $12.30
  -  12
  ------
       3
```

Step 1: 12 ones ÷ 6 = 2 ones

```
   $  2.0
6 ) $12.30
  -  12
  ------
       3
     - 0
  ------
      30
```

Step 2: 3 tenths ÷ 6
= 0 tenths with remainder
3 tenths

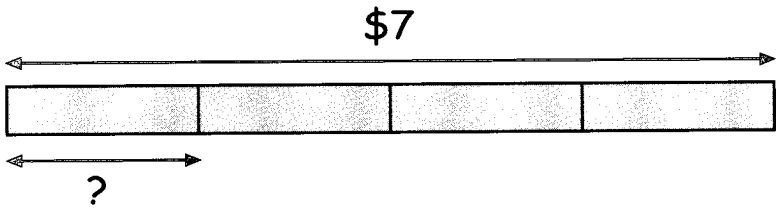
```
   $  2.05
6 ) $12.30
  -  12
  ------
       3
     - 0
  ------
      30
    - 30
  ------
       0
```

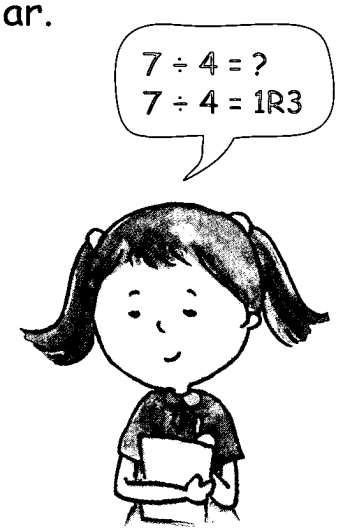
Step 3: 3 tenths = 30 hundredths
30 hundredths ÷ 6
= 5 hundredths

$12.30 ÷ 6 = $2.05

1 litre of milk costs $2.05.

4. Mary paid $7 for 4 sets of stamps.
What was the cost of 1 set of stamps?
Round off your answer to the nearest dollar.





We can also write $7 as $7.00 and divide further to get a decimal.

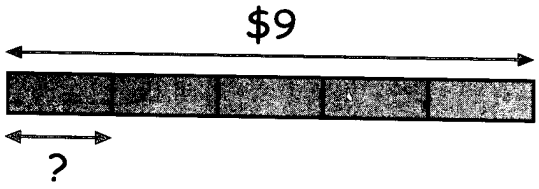
$$
\begin{array}{r}
\$1. \\
4\overline{)\$7.00} \\
-\ 4\ \downarrow \\
\hline
3\ 0
\end{array}
\quad\Rightarrow\quad
\begin{array}{r}
\$1.7 \\
4\overline{)\$7.00} \\
-\ 4 \\
\hline
{}^{2}\cancel{3}\,{}^{1}0 \\
-\ 2\ 8\ \downarrow \\
\hline
2\ 0
\end{array}
\quad\Rightarrow\quad
\begin{array}{r}
\$1.75 \\
4\overline{)\$7.00} \\
-\ 4 \\
\hline
{}^{2}\cancel{3}\,{}^{1}0 \\
-\ 2\ 8 \\
\hline
2\ 0 \\
-\ 2\ 0 \\
\hline
0
\end{array}
$$

$7 ÷ 4 = $1.75

$1.75 ≈ $2

1 set of stamps cost about $2.

5. John spent $9 on 5 identical pens. How much did each pen cost?



$9 ÷ 5 = $ ☐

Each pen cost $ ☐.

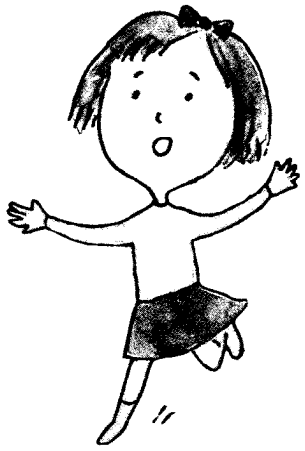
$$
\begin{array}{r}
\$\square.\square \\
5\,\overline{)\,\$\ 9.0} \\
-\ \square \\
\hline
\square\ 0 \\
-\ \square\ 0 \\
\hline
0
\end{array}
$$

Divide 5 by 3.

$$
\begin{array}{r}
1.666 \\
3\,\overline{)\,5.0000} \\
-\ 3 \\
\hline
2\ 0 \\
-\ 1\ 8 \\
\hline
2\ 0 \\
-\ 1\ 8 \\
\hline
2\ 0 \\
-\ 1\ 8 \\
\hline
2
\end{array}
$$

Divide further.
What do you notice?

Round off your answer to 2 decimal places.



Let's Try .. Division of Decimals

1. Divide the following.

(a) $7.2 \div 2$

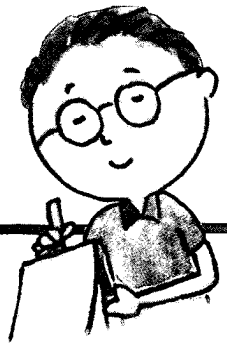
(b) $0.9 \div 3$

(c) $1.5 \div 5$

(d) $6.32 \div 4$

(e) $12 \div 5$

(f) $6 \div 4$



2. Raju put 86.4 kg of rice equally into 6 packets. Find the mass of 1 packet of rice. Round off your answer to the nearest kg.

3. Maria used 2.34 kg of flour to make 9 cakes of the same size. How much flour did she use for each cake?

4. The total capacity of 5 identical containers is 3.65 *l*. How many litres of water can each container hold?

5. Jane bought 8 m of cloth for $55.68. Estimate and then calculate the cost of 1 m of cloth.

Worksheet 35

Let's Learn .•. Word Problems

1. A bag costs $25.45 and a blouse costs $42.80. Find the total cost of 2 bags and 1 blouse.

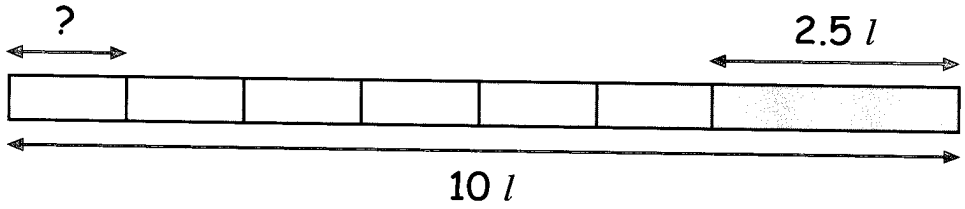
$25.45 x 2 = $50.90

2 bags cost $50.90.

$50.90 + $42.80 = $93.70

The total cost of 2 bags and 1 blouse is $93.70.

2. Joyce bought 10 *l* of orange juice. After filling up 6 identical bottles with orange juice, she had 2.5 *l* of orange juice left. Find the amount of orange juice in each bottle.



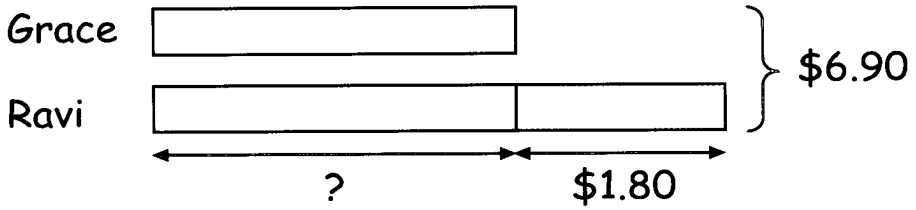
10 - 2.5 = 7.5

The total amount of orange juice in 6 bottles was 7.5 *l*.

7.5 ÷ 6 = 1.25

The amount of orange juice in each bottle was 1.25 *l*.

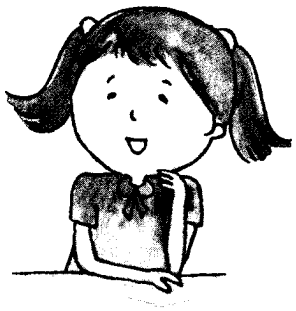
3. Ravi and Grace have a total of $6.90. Ravi has $1.80 more than Grace. How much money does Grace have?



2 units ⟶ $6.90 - $1.80
= $5.10

1 unit ⟶ $5.10 ÷ 2
= $2.55

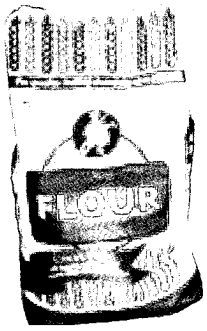
Grace has $2.55.



4. Maria used 3 packets of flour to make 2 cakes of the same size. Each packet of flour had a mass of 1.5 kg. How much flour did she use for each cake?

1.5 x 3 = ☐

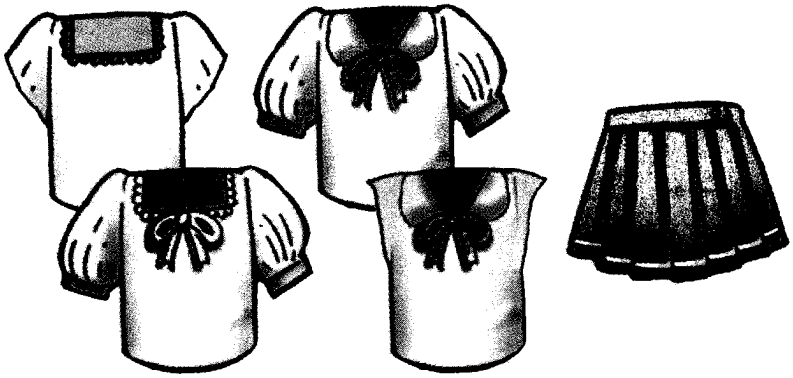
3 packets of flour have a mass of ☐ kg.



☐ ÷ 2 = ☐ kg

She used ☐ kg of flour for each cake.

5. Mei Ling bought 4 blouses and 1 skirt. Each blouse cost $18.30 and the skirt cost $21.25. How much did Mei Ling pay for all the items? Round off your answer to the nearest whole number.



$\square$ × 4 = $\square$

4 blouses cost $\square$.

1 skirt cost $\square$.

Total cost = $\square$ + $\square$

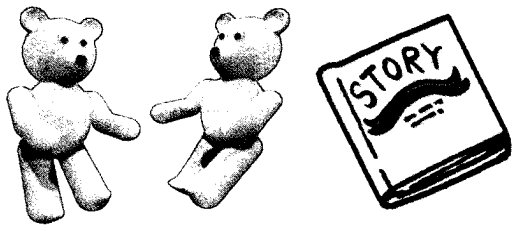
= $\square$

≈ $\square$

Mei Ling paid about $\square$ for all the items.

Let's Try .·. Word Problems

1. A teddy bear costs $18.05 and a storybook costs $12.50. What is the total cost of 2 such teddy bears and 1 storybook?

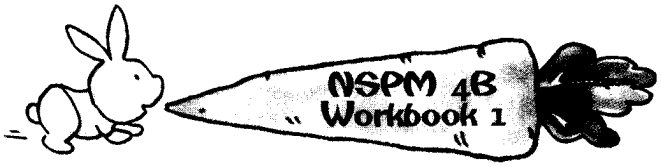


2. John had $84.40. He bought an umbrella for $18.60 and spent the remaining money on 4 T-shirts of the same price. Find the cost of each T-shirt.

3. The cost of 1 red pen is $2.45. A blue pen costs $0.80 more than the red pen. How much money would Jane pay if she buys 4 such blue pens?

4. Joyce had 10.25 m of ribbon. She used some of the ribbon to tie 5 gifts. She used 1.25 m of ribbon for each gift. How much ribbon was she left with?

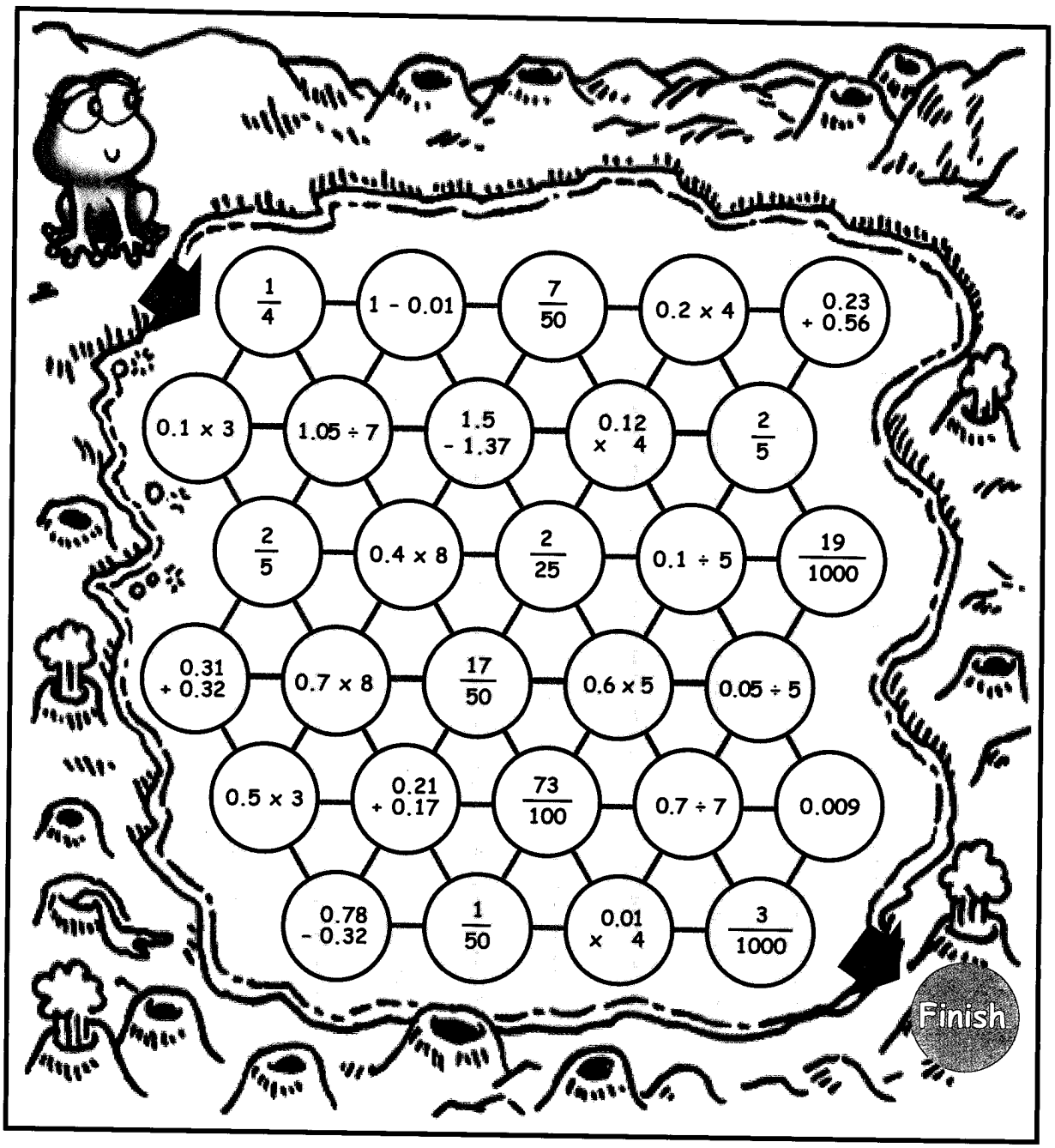
5. The total mass of Peter and Kelvin is 79.5 kg. If Peter loses 3.5 kg and Kelvin's mass remains unchanged, they will have the same mass. What is Kelvin's mass?



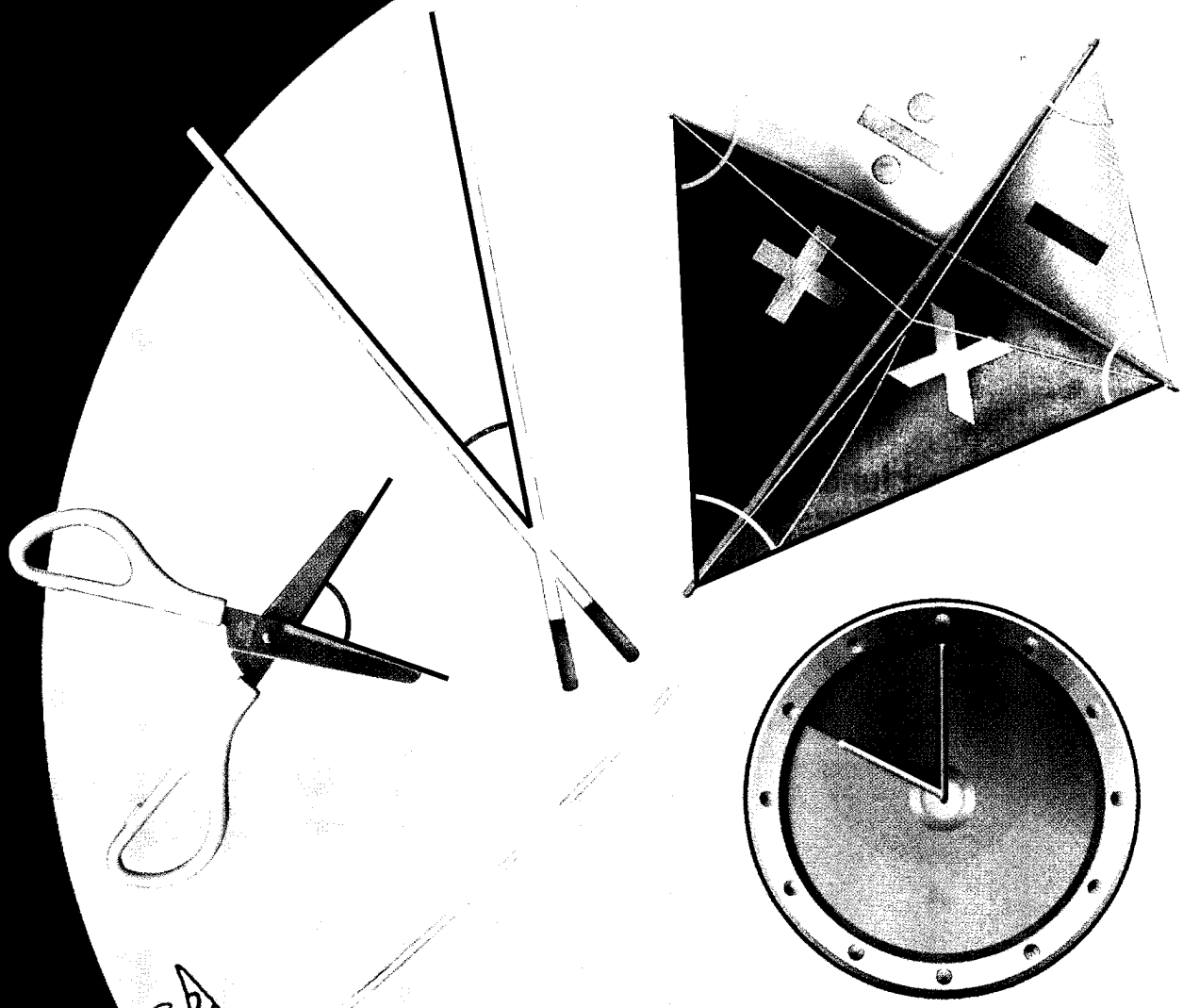
Worksheet 36
Practice 9

Fun with Maths

Help the frog cross the lake by jumping from one stepping stone to the next. The next number on a stone must be smaller than the one before. Trace the path to see how the frog jumps across the lake.



10 Angles

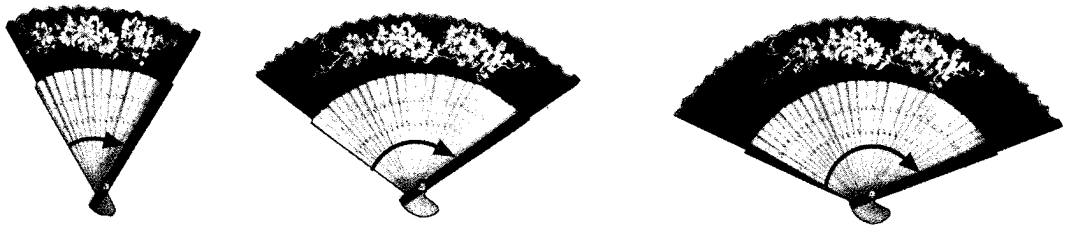


Do you know?

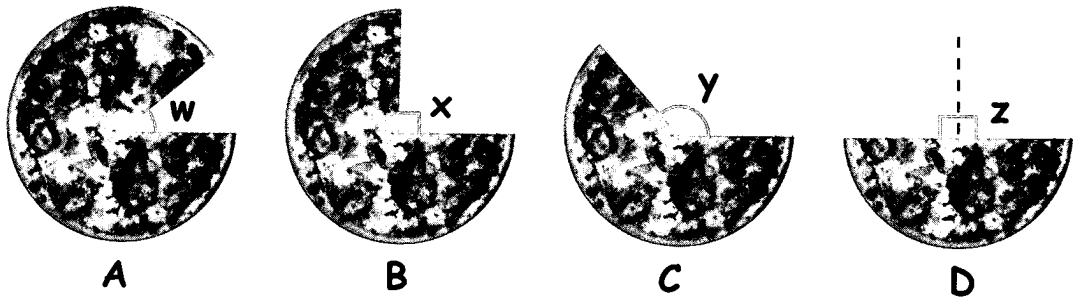
Can you estimate the size of each of the angles shown in the picture?

Let's Learn .. Estimating and Measuring Angles

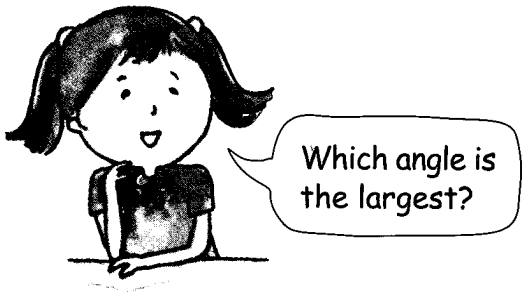
When an object turns or rotates about a point, it creates an angle.

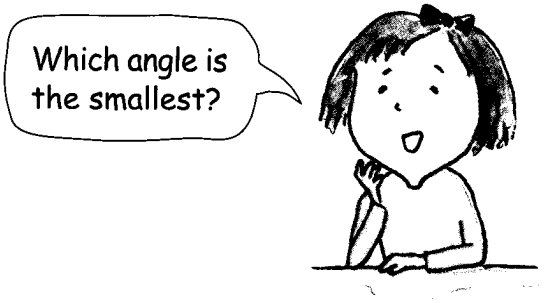


1. John had lunch in a pizza joint. He noticed that angles of different sizes were formed when wedges of the pizza were removed.

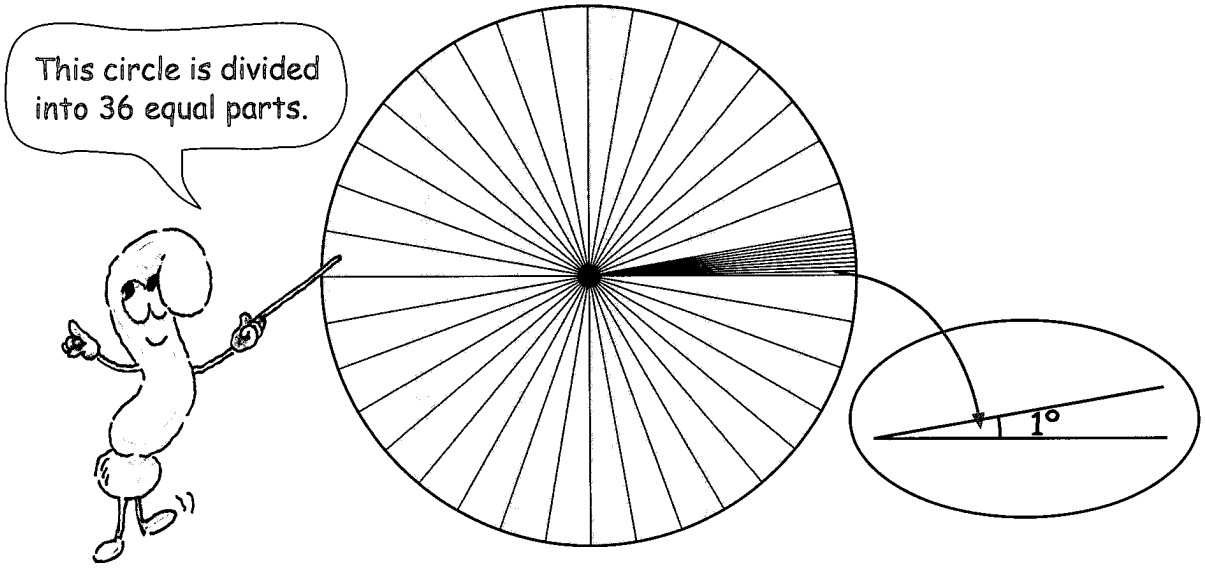


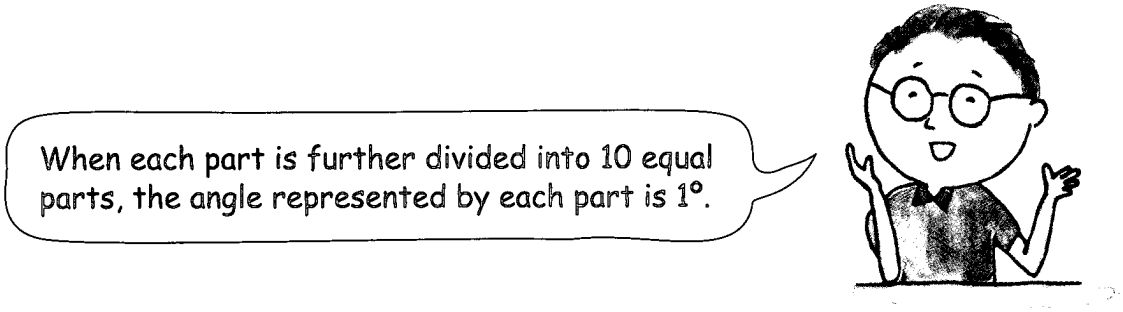
∠x is a right angle.
∠z is made up of 2 right angles.



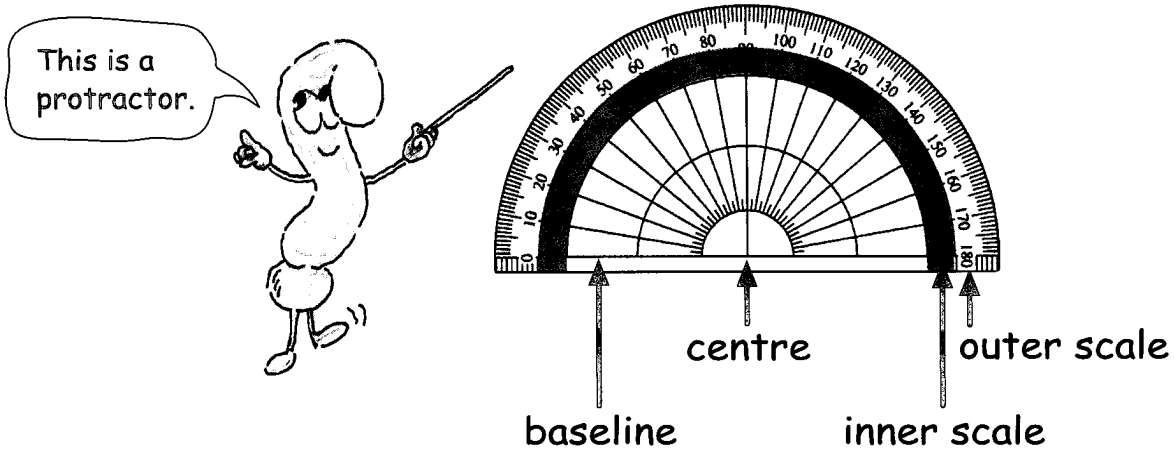


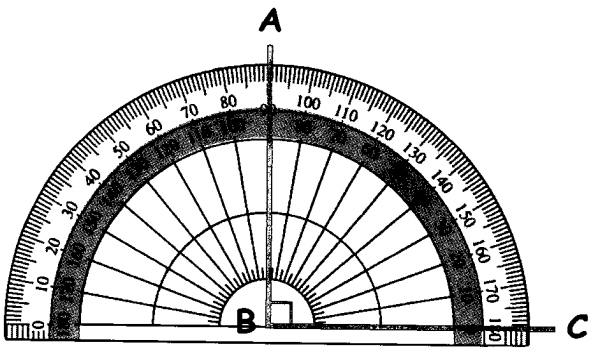
We measure angles in degrees.
We write 1 degree as 1°.





We use a protractor to measure and draw angles.

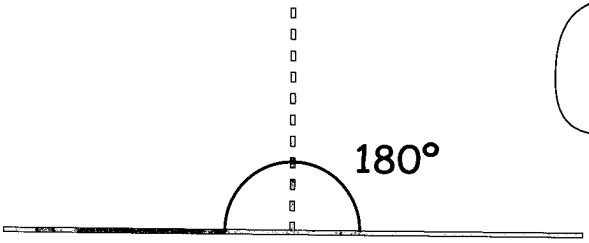


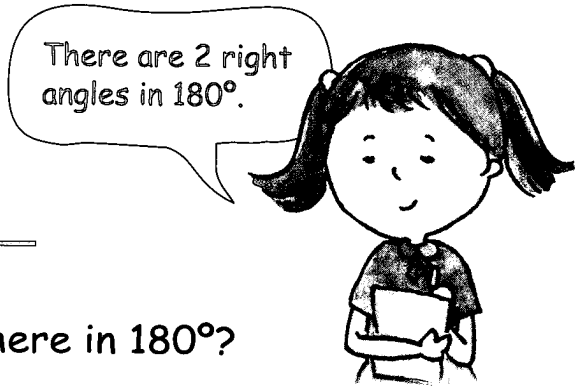
2. 

$\angle ABC$ measures 90°.

1 right angle = 90°

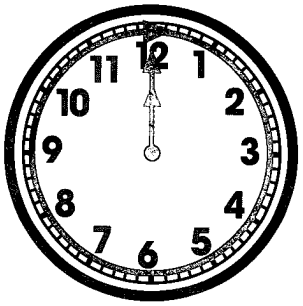
We can measure angles up to 180° using a protractor.





How many right angles are there in 180°?

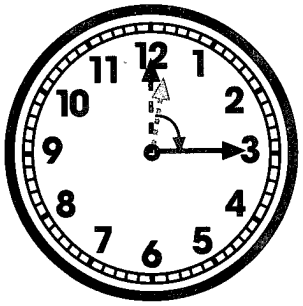
3. Observe the minute hand of the clock as it makes a complete turn in 1 hour.



(a) It makes an angle of 360° in one complete turn.

Therefore, 1 complete turn is 360°.

(b)

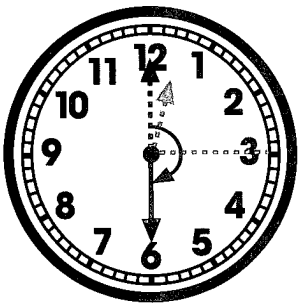


In 15 minutes, the minute hand makes a right angle.

It is 90°.

It is $\frac{1}{4}$ of a complete turn.

(c)

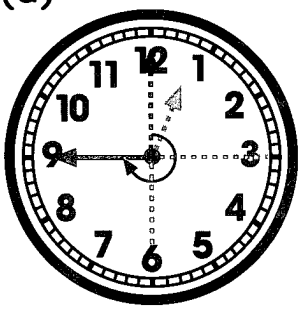


In 30 minutes, the minute hand makes an angle which is twice a right angle.

It is 180°.

It is $\frac{1}{2}$ of a complete turn.

(d)

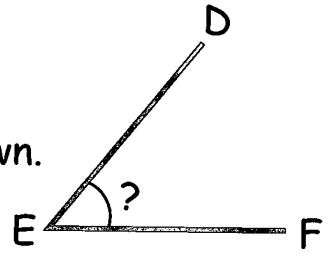


In 45 minutes, the minute hand makes an angle which is 3 times a right angle.

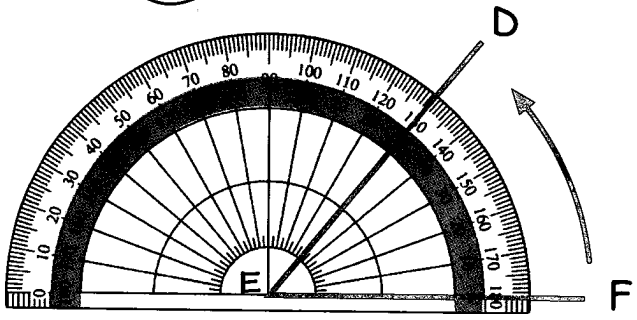
It is 270°.

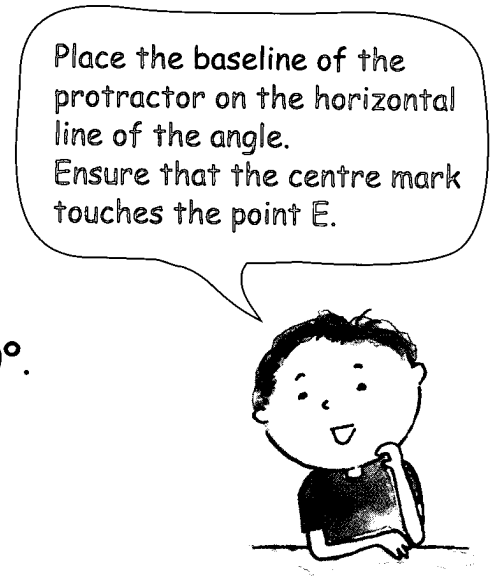
It is $\frac{3}{4}$ of a complete turn.

5. How do we measure this angle, ∠DEF?



STEP 1 Place the protractor as shown.



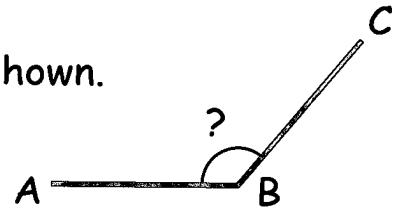


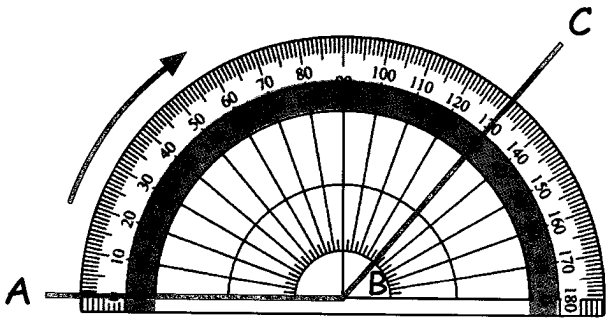
STEP 2 Read the inner scale anticlockwise from 0°.

∠DEF = 50°

6. To measure a given angle ∠ABC, using a protractor:

STEP 1 Place the protractor as shown.

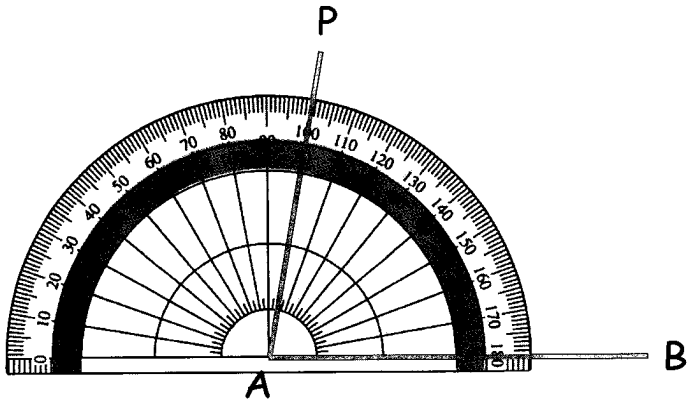




STEP 2 Read the outer scale clockwise from 0°.

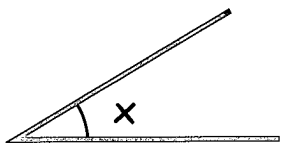
∠ABC = 130°

7. What is the size of ∠PAB?

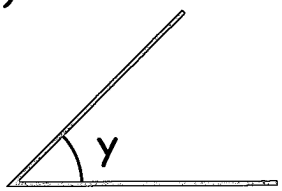


8. Estimate the size of the angles shown below. Check your answers by measuring the angles using a protractor. Then complete the table below.

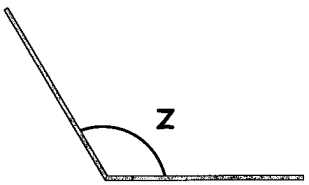
(a)



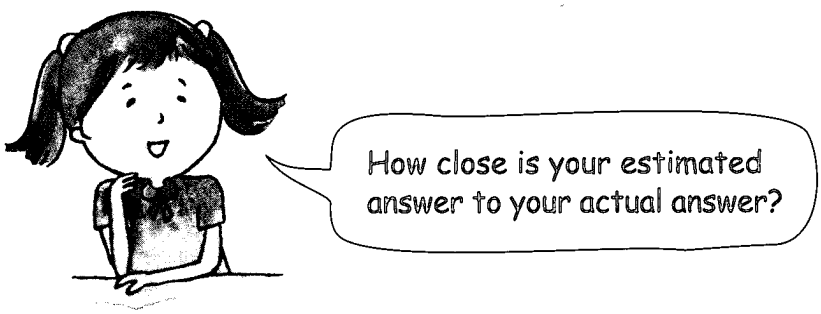
(b)



(c)



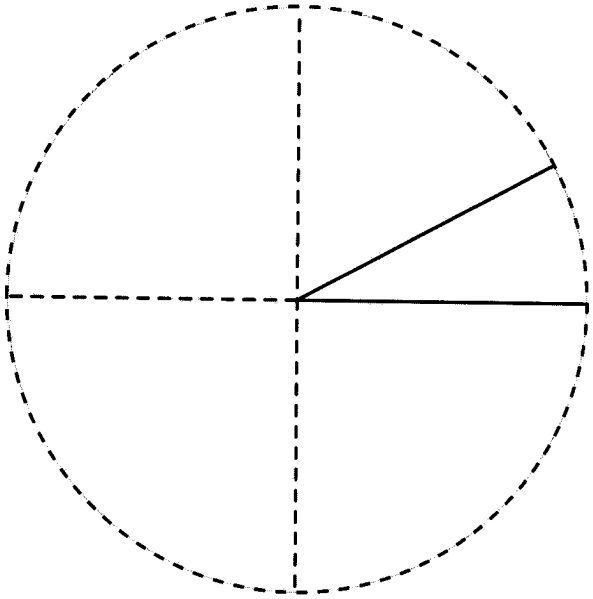
Angle	More than 90°/ Less than 90°	Estimated answer	Measured answer
x			
y			
z			

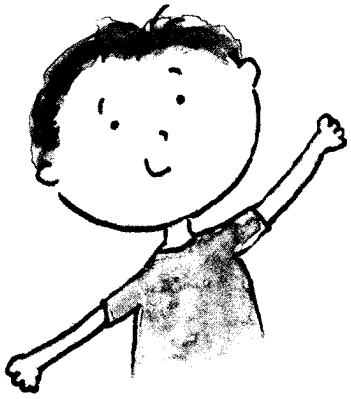


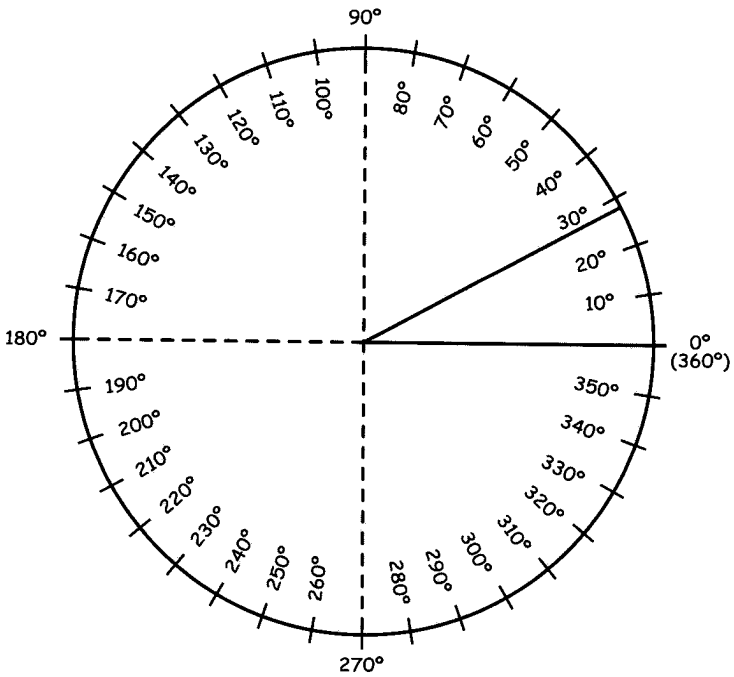
Get a circular piece of transparency or tracing paper. Draw an angle on it and ask your classmate to estimate the size of the angle.

Place the transparency or tracing paper on the angle chart to check if the estimation was correct.

Circular transparency/ tracing paper



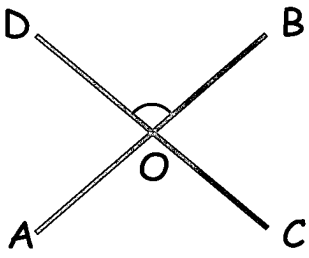


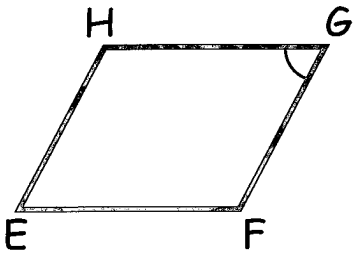


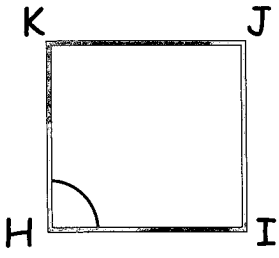
Angle chart

Estimating and Measuring Angles

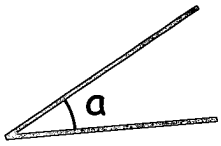
1. Estimate the size of the marked angles in the following figures. Then check your answer by measuring the angles using a protractor.



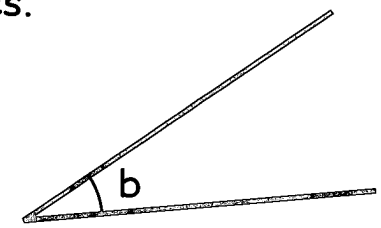




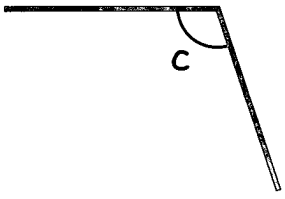
2. Meaure the following angles.



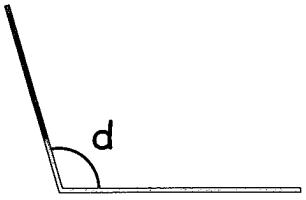
$\angle a =$ ☐°



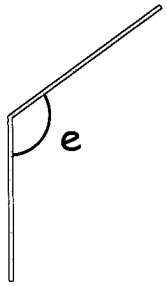
$\angle b =$ ☐°



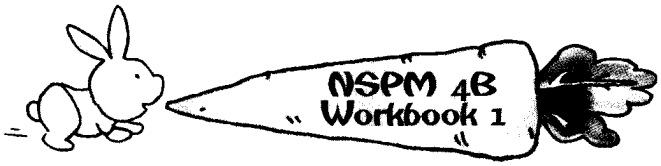
$\angle c =$ ☐°



$\angle d =$ ☐°



$\angle e =$ ☐°



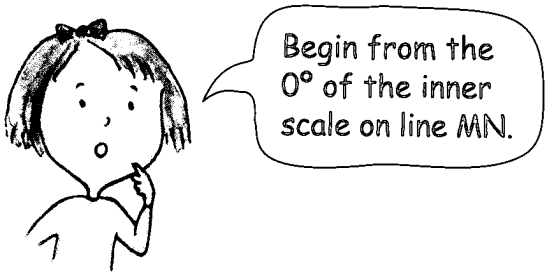
Worksheet 37

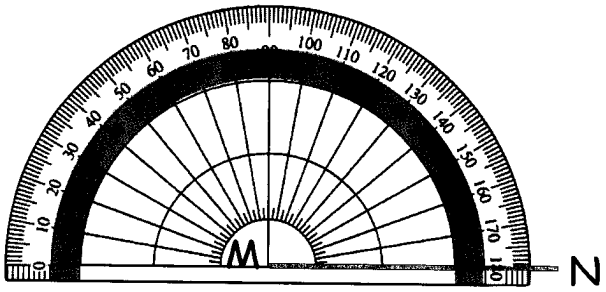
Let's Learn .•. Drawing Angles

1. Draw an angle LMN measuring 60°.

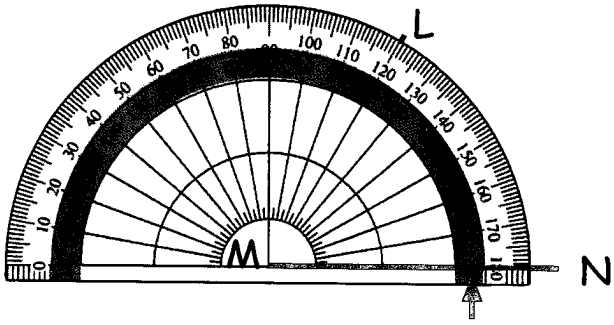
STEP 1 Draw a horizontal line MN using a ruler.

STEP 2 Place the centre of the protractor on M with the baseline falling on MN as shown.

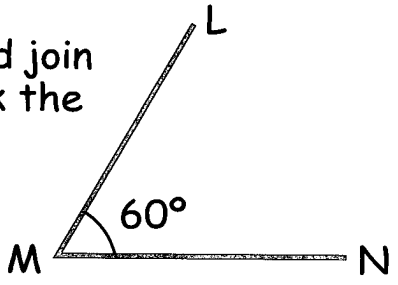




STEP 3 Find the 60° mark on the inner scale and mark the position as L.



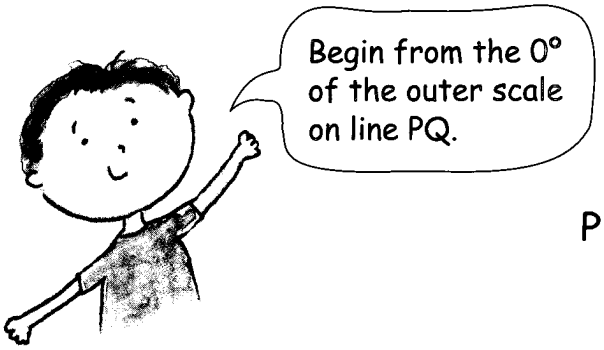
STEP 4 Remove the protractor and join L to M using a ruler. Mark the angle measuring 60°.

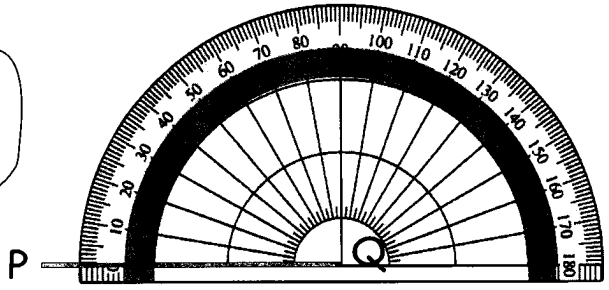


2. Draw an angle PQR measuring 120°.

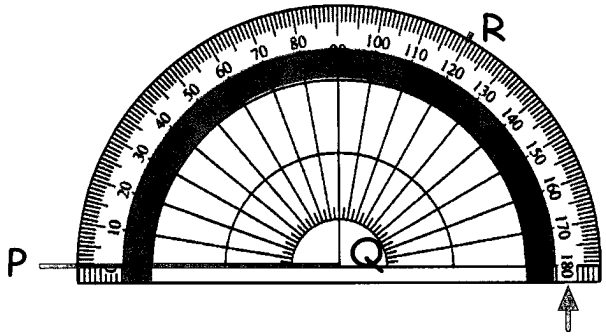
STEP 1 Draw a horizontal line PQ using a ruler.

STEP 2 Place the centre of the protractor on Q with the baseline falling on PQ as shown.

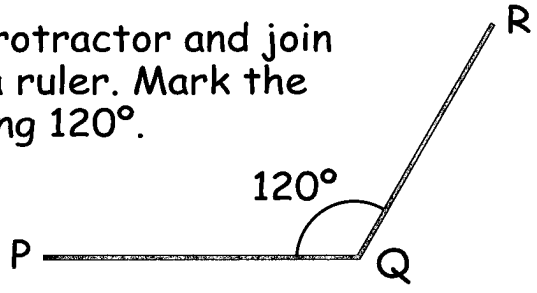




STEP 3 Find the 120° mark on the outer scale and mark the position as R.



STEP 4 Remove the protractor and join R to Q using a ruler. Mark the angle measuring 120°.

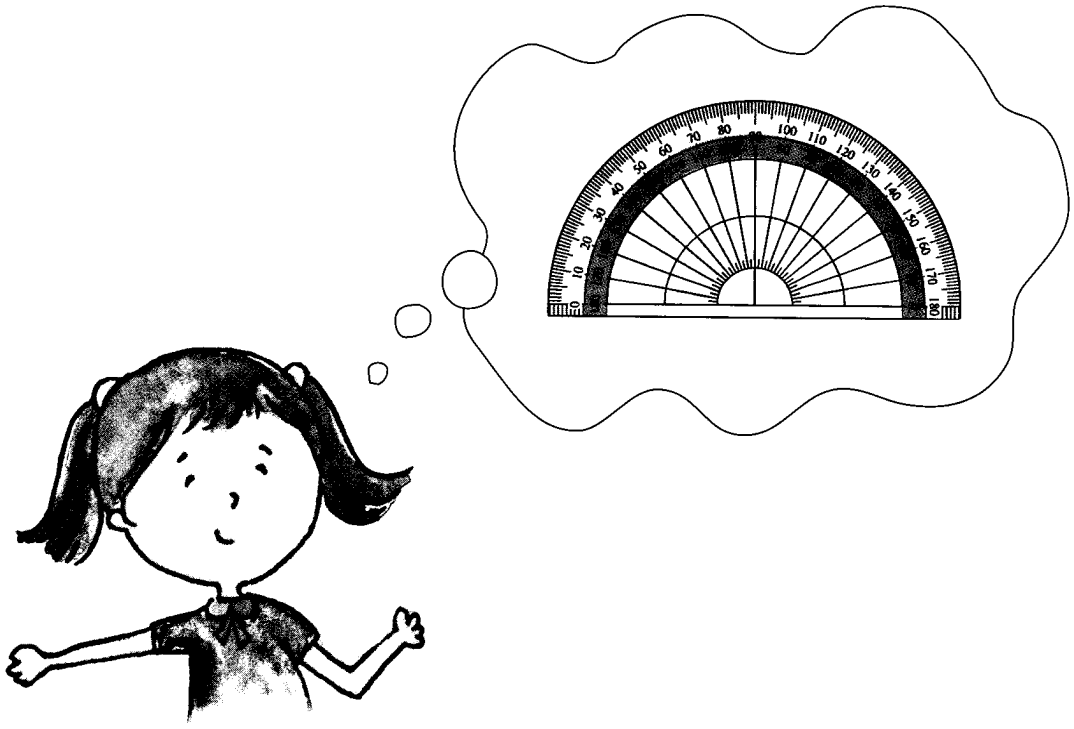


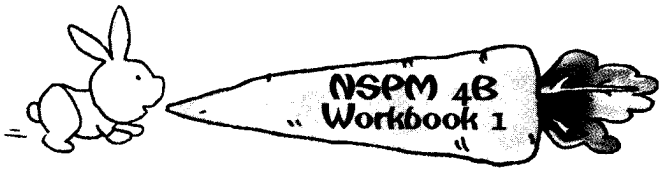
Let's Try .•. Drawing Angles

Take turns with your classmate to draw angles using a protractor. (The size of the angle should not exceed 180°.)

Below are some angles you can draw.

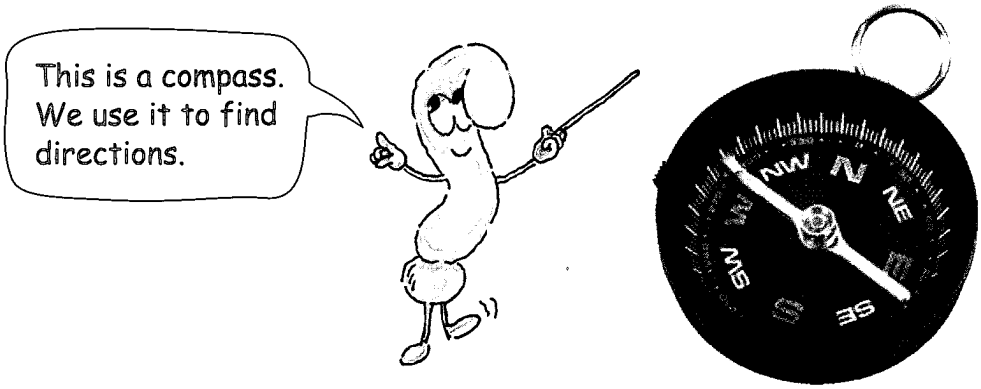
32° 68° 110° 170°





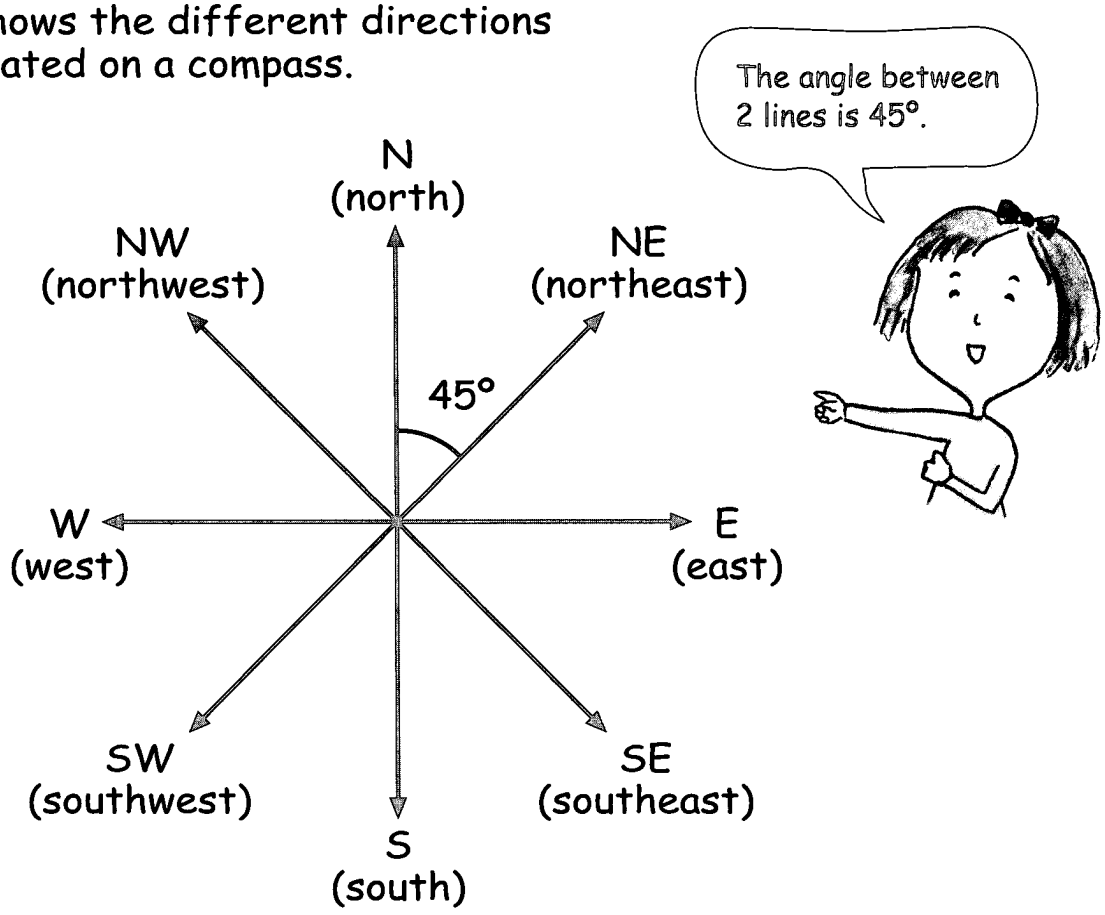
Worksheet 38

Let's Learn ... 8-point Compass

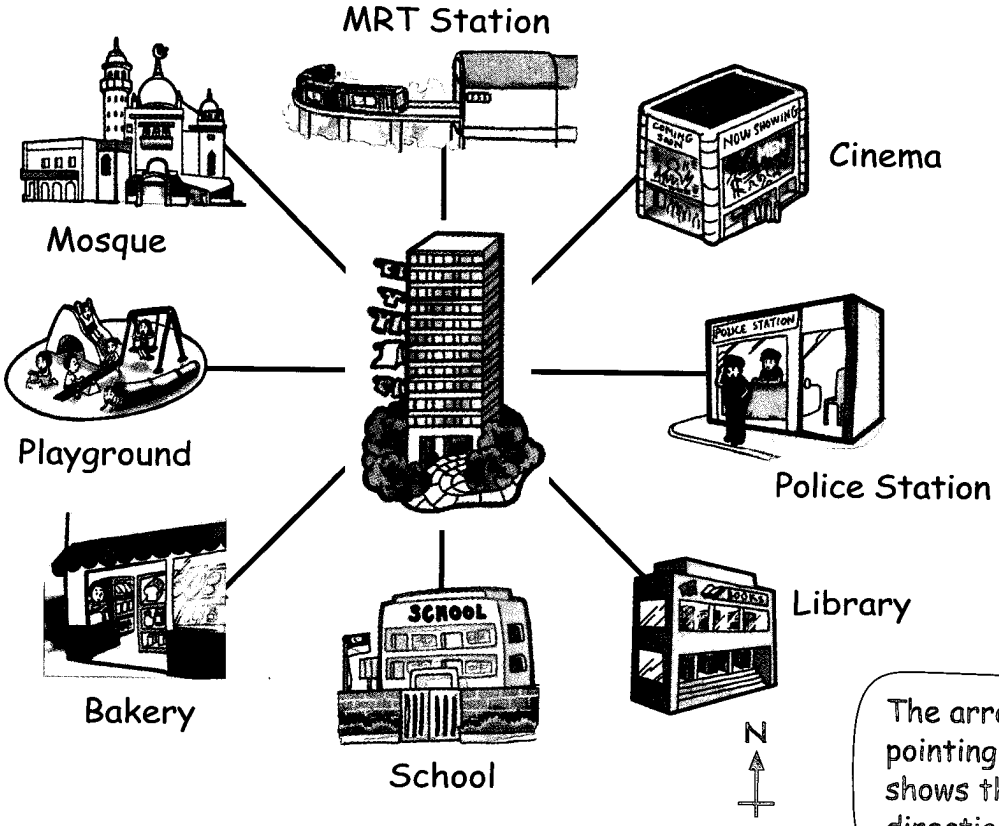


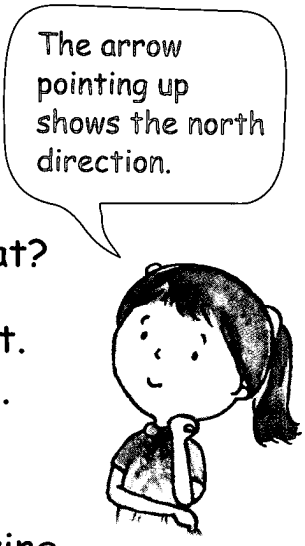
Look at the diagram below.

It shows the different directions indicated on a compass.



The diagram below shows the place where Jason lives.





1. Look at the places around Jason's flat.
   In which direction is each place from his flat?

   (a) The MRT station is north of Jason's flat.
   (b) The bakery is southwest of Jason's flat.
   (c) The playground is west of Jason's flat.

2. Use the diagram above to answer the following.

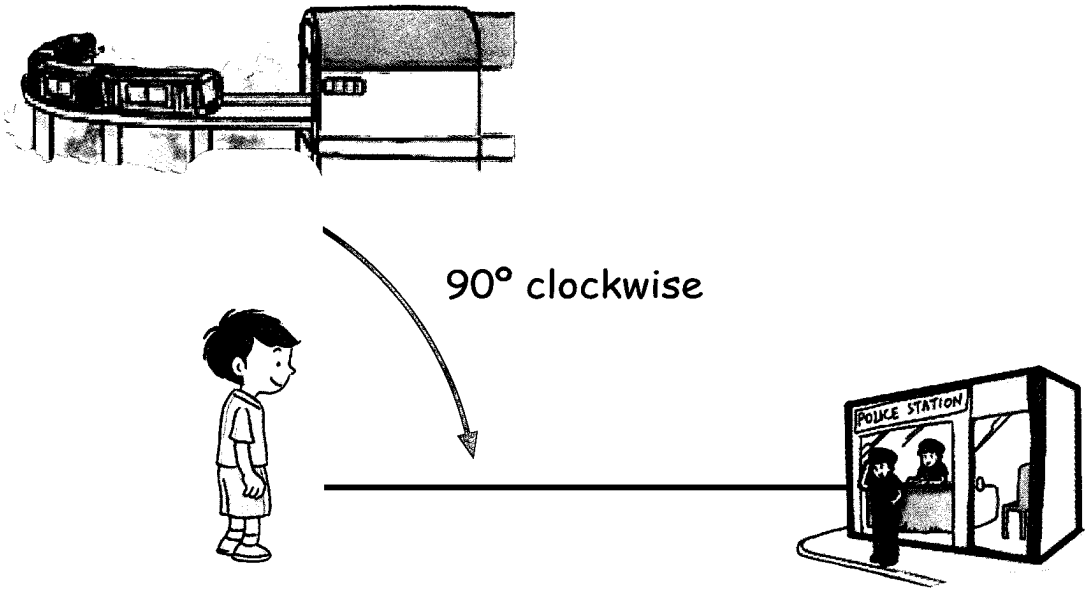
   (a) The police station is ☐ of where Jason lives.

   (b) The ☐ is south of Jason's flat.

   (c) The cinema is ☐ of Jason's flat.

   (d) If Jason walks from his flat to the northwest, he will reach the ☐.

3. (a) Jason is facing the MRT station.
If Jason turns 90° clockwise, he faces the police station.



(b) Jason is facing the police station.

If he turns 45° clockwise, he faces the ☐.

(c) Jason is facing the school.

If he turns 135° clockwise, he faces the ☐.

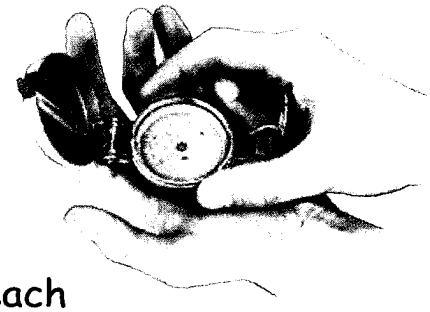
4. (a) Jason is facing north.
If Jason turns 90° anticlockwise, he faces the playground.

(b) Jason is facing southeast.

If he turns 270° anticlockwise, he faces the ☐.

(c) Jason is facing southwest.

If he turns 180° anticlockwise, he faces the ☐.

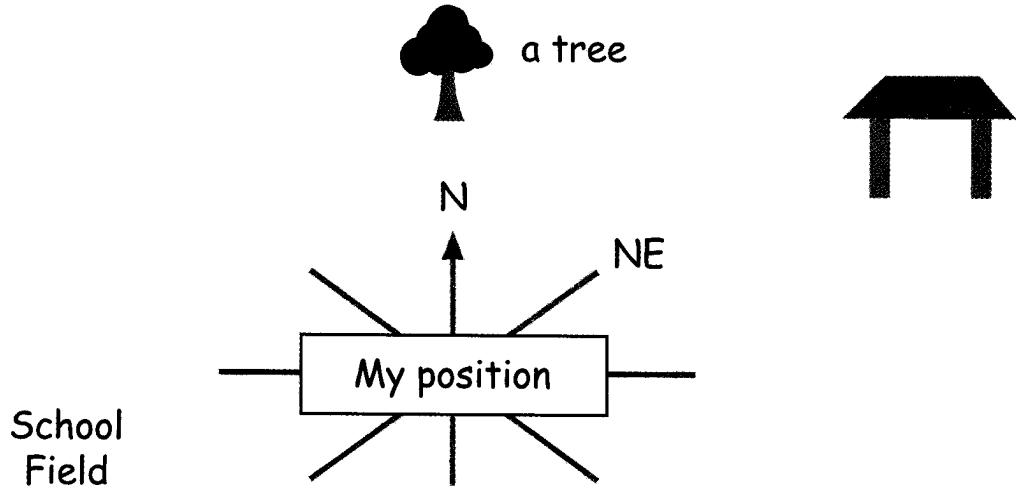


Go to the middle of your school field. Stand facing north. (Your teacher will determine the north direction using a compass.)

Identify objects which you can find in each direction of the 8-point compass.

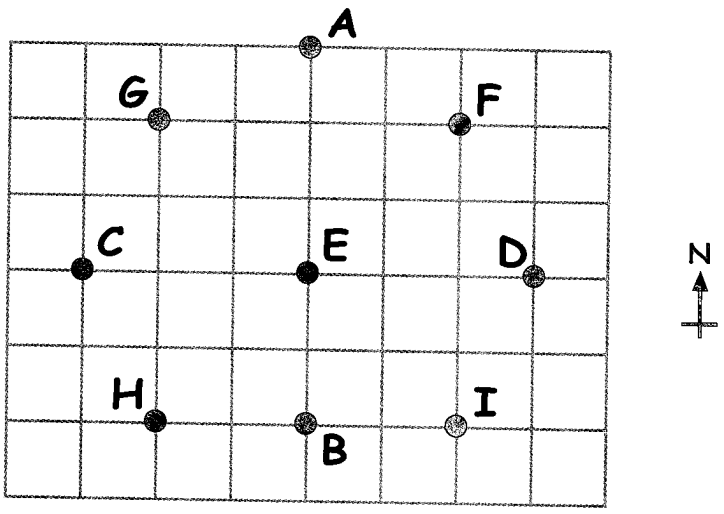
Draw what you see on paper.

For example:



Let's Try ... 8-point Compass

1. Look at the diagram below and answer the following questions.



(a) ( ) is east of E.

(b) ( ) is northwest of D.

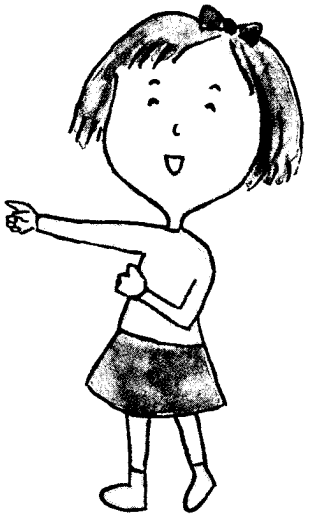
(c) F is ( ) of E.

(d) H is ( ) of G.

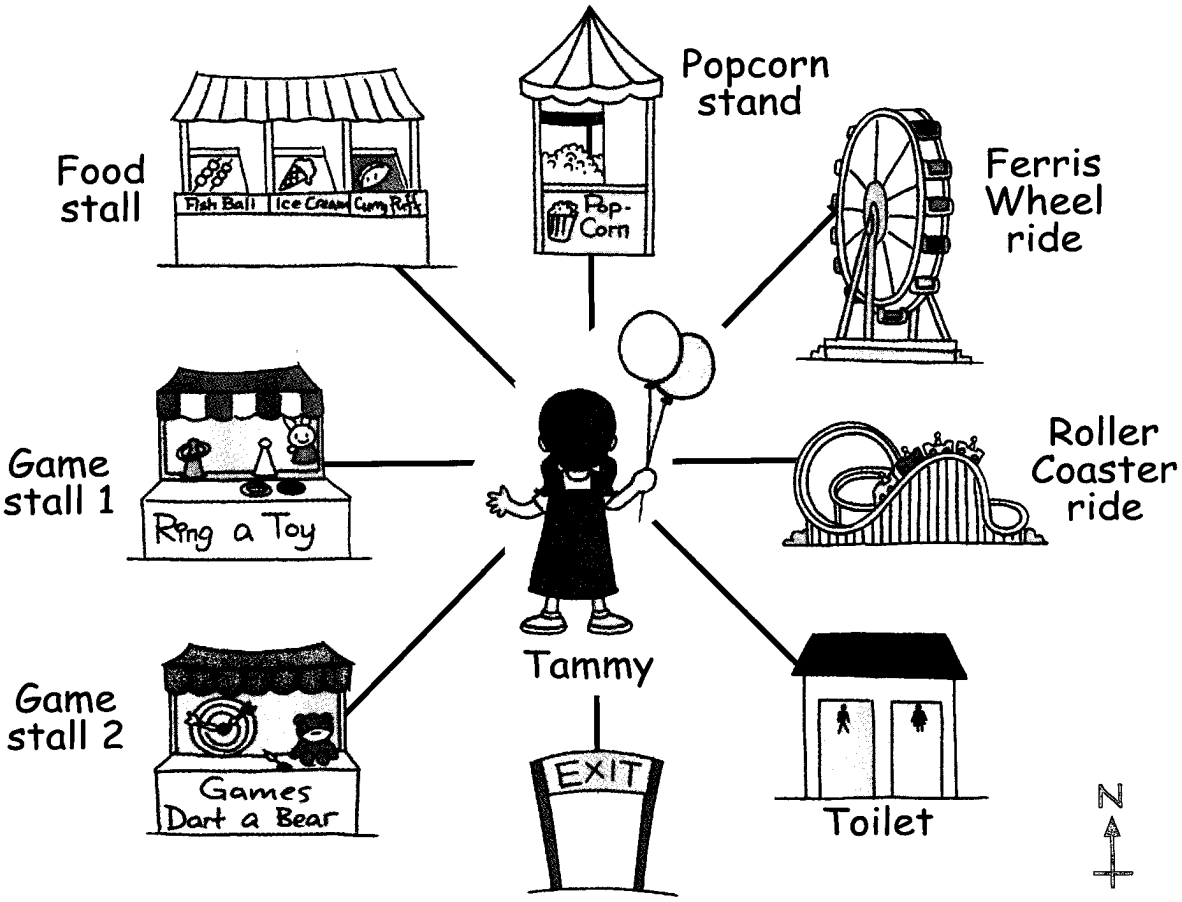
(e) C is ( ) of E.

(f) H is ( ) of E.

(g) I is southeast of ( ).



2. At a fun fair, Tammy stands in the middle, facing north.



Look at the places around Tammy and answer the questions below.

(a) The popcorn stand is ☐ of Tammy.

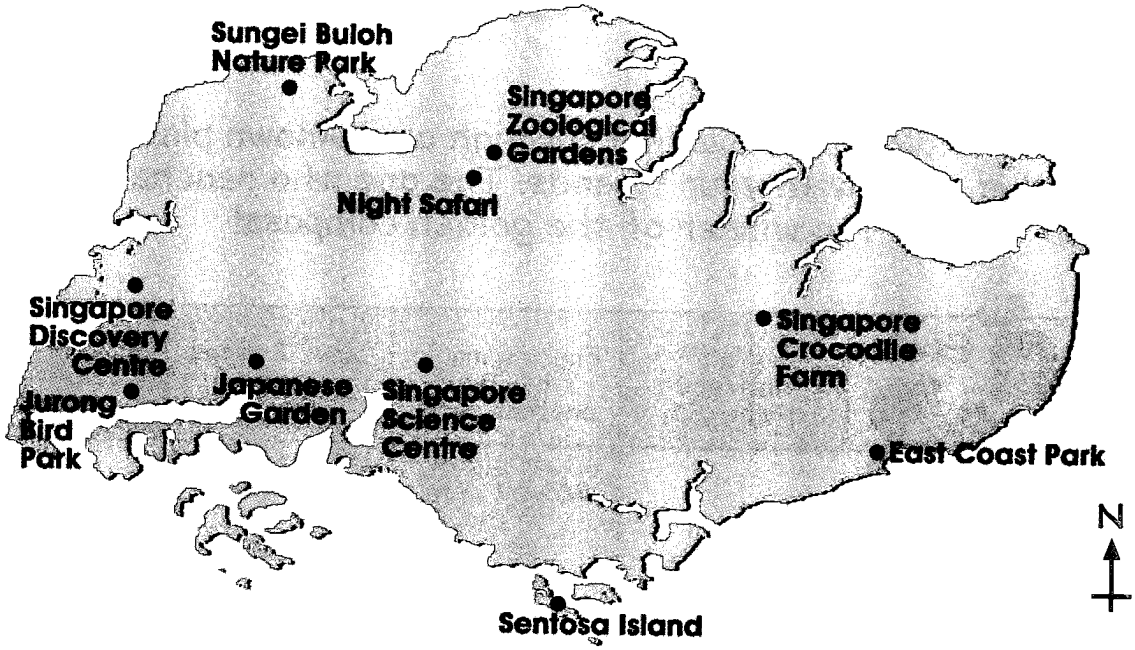
(b) The toilet is ☐ of Tammy.

(c) The ☐ is northeast of Tammy.

(d) If she turns 180° anticlockwise, she will face the ☐.

(e) If Tammy faces the food stall and turns 135° clockwise, she will face the ☐.

3. Look at the map of Singapore and answer the following questions.



(a) What is the direction of the Night Safari from the Singapore Zoological Gardens?

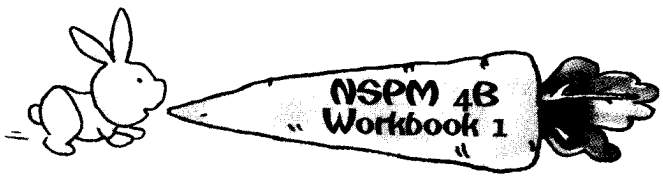
(b) What is the direction of the Singapore Crocodile Farm from the East Coast Park?

(c) What is southeast of the Singapore Science Centre?

(d) What is the direction of the Singapore Discovery Centre from the Japanese Garden?

(e) What is southeast of the Sungei Buloh Nature Park?

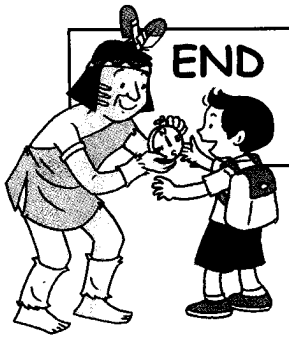
(f) What is north of the Jurong Bird Park?



Worksheet 39
Practice 10

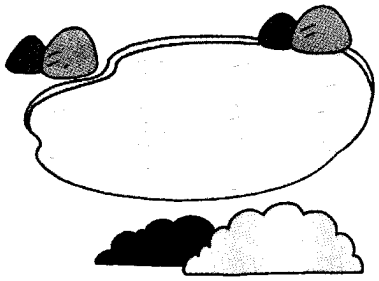
Fun with Maths

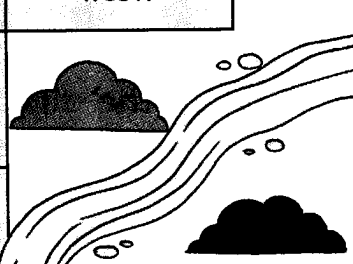
Take turns to throw a dice.
You are explorers travelling through an unknown place.
Play this game with your friends. The one who reaches the 'END' first is the winner of the golden compass!



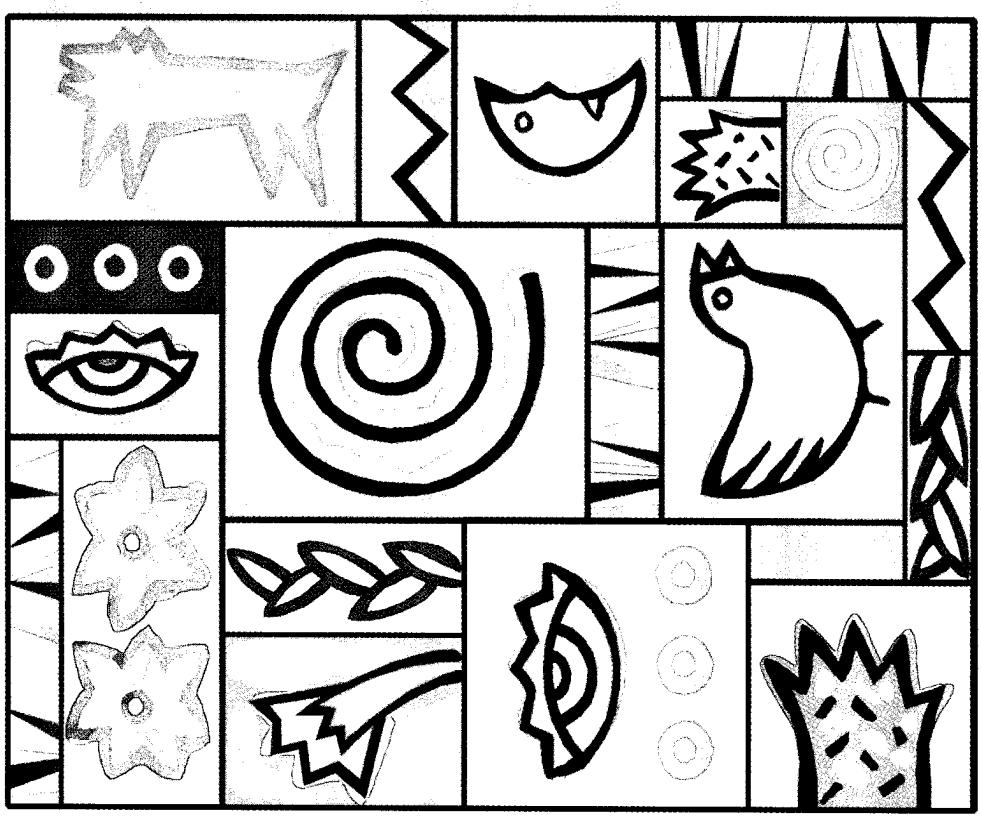
You have won the Golden Compass!

END	20 Wait until you throw a 1.	19 Found a magic ring. Take another turn!	18 Move 2 steps to the west.	17 Move 4 steps to the west.
		15 Move 1 step to the east.	16 Move 1 step to the north.	
		14 Bitten by a scorpion! Miss a turn!		
10 Move 2 steps to the east.	11 Move 1 step to the northeast.	12 Searching for food. Miss a turn.	13 Move 1 step to the west.	
9 Move 2 steps to the northeast.	8 Move 1 step to the northeast.	7 Move 3 steps to the south.	6 Move 3 steps to the west.	
		5 Move 1 step to the northwest.		
		4 Move 3 steps to the north.		
		3 Take a rest. Miss a turn!	2 Cross a river.	1 Move 2 steps to the west.





11 Squares and Rectangles

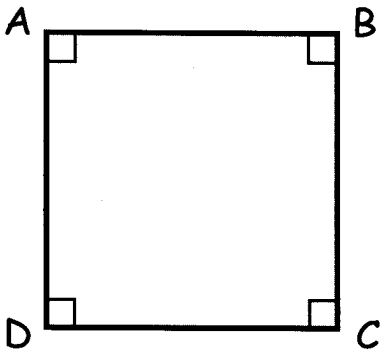


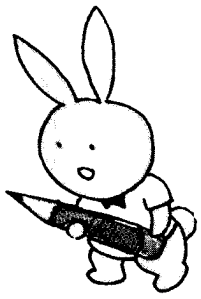
Do You Know?

How many square and rectangular pictures are there above?

Let's Learn .. Squares

ABCD is a square.

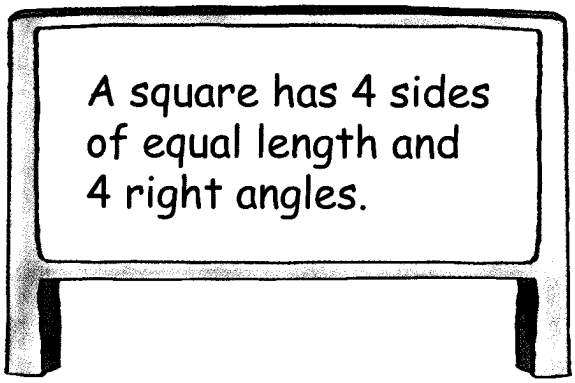




Use a ruler to measure AB, BC, CD and DA.
You will find that AB = BC = CD = DA.

Use a protractor to measure ∠ABC, ∠BCD, ∠CDA and ∠DAB.

You will find that ∠ABC = ∠BCD = ∠CDA = ∠DAB = 90°.

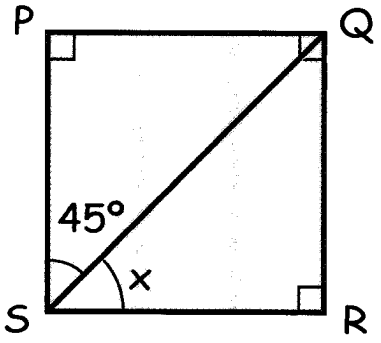


Use a ruler and a set square to check for perpendicular lines and parallel lines in square ABCD.

A square has ☐ pairs of perpendicular lines.

A square has ☐ pairs of parallel lines.

1. PQRS is a square. Find $\angle x$.

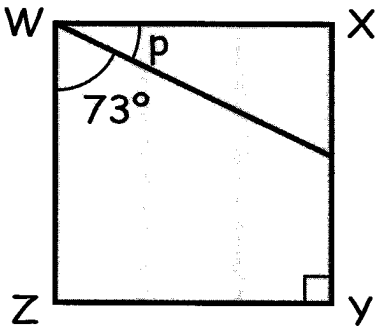


$\angle PSR = 90°$

$\angle x = 90° - 45°$

$= 45°$

2. WXYZ is a square. Find $\angle p$.

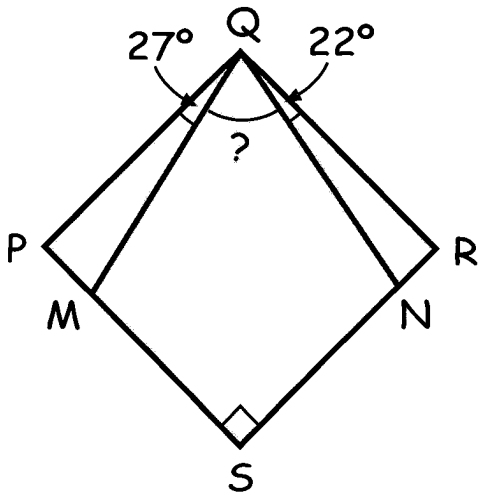


$\angle XWZ =$ ☐ °

$\angle p =$ ☐ ° - ☐ °

$=$ ☐ °

3. The figure PQRS is a square. $\angle PQM = 27°$ and $\angle NQR = 22°$. Find $\angle MQN$.



$\angle PQR =$ ☐ °

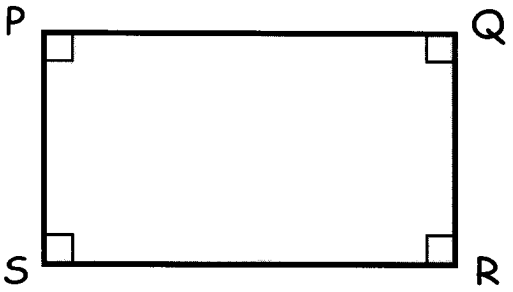
$\angle MQN = \angle$ ☐ $- \angle$ ☐ $- \angle$ ☐

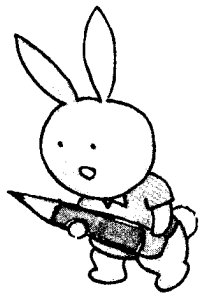
$=$ ☐ ° - ☐ ° - ☐ °

$=$ ☐ °

Let's Learn .0. Rectangles

PQRS is a rectangle.

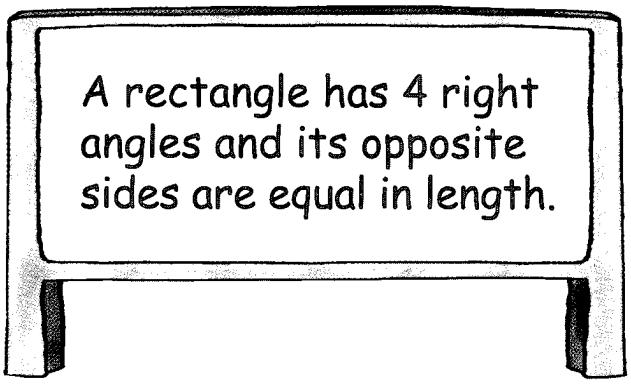


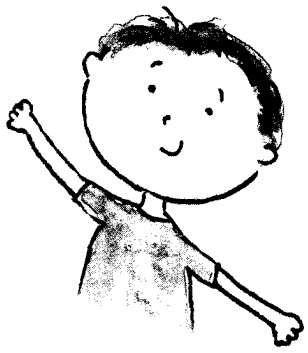


Use a ruler to measure PQ, QR, RS and SP.
You will find that length of PQ = length of RS and
length of SP = length of QR.

Use a protractor to measure ∠SPQ, ∠PQR, ∠QRS and ∠RSP.

You will find that ∠SPQ = ∠PQR = ∠QRS = ∠RSP = 90°.



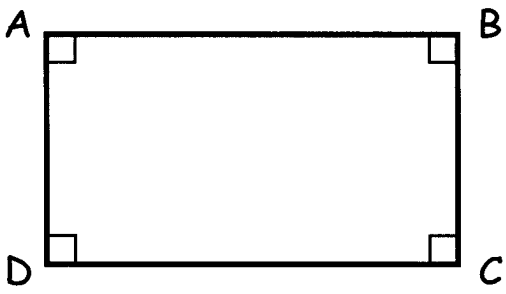


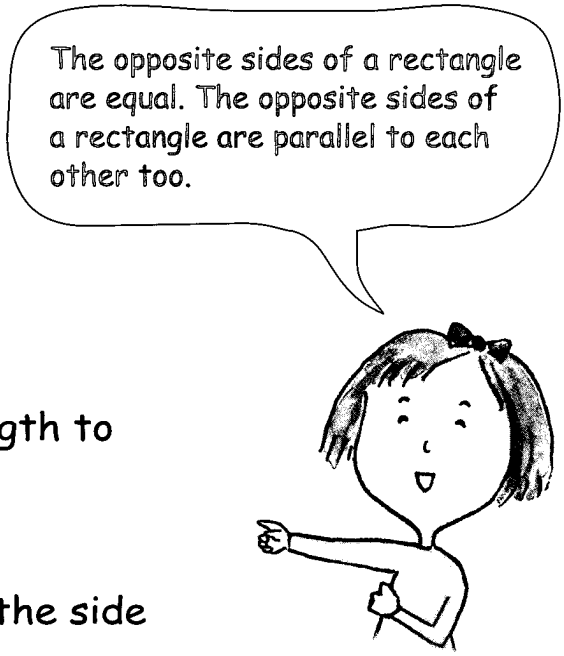
Use a ruler and a set square to check for perpendicular lines and parallel lines in rectangle PQRS.

A rectangle has _____ pairs of perpendicular lines.

A rectangle has _____ pairs of parallel lines.

1. ABCD is a rectangle.

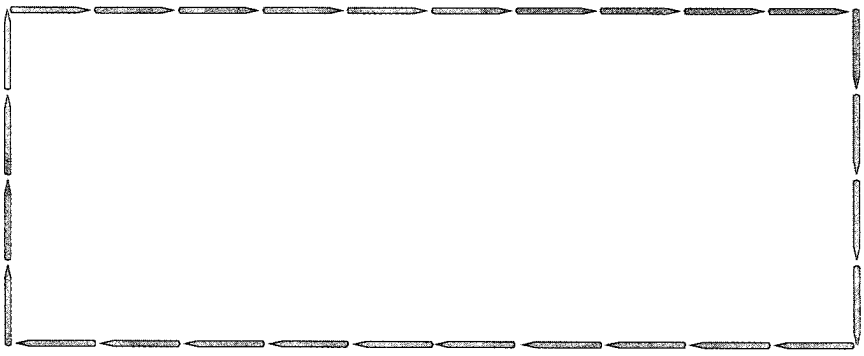




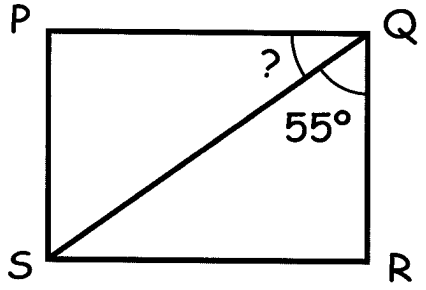
The side which is equal in length to AB is _____.

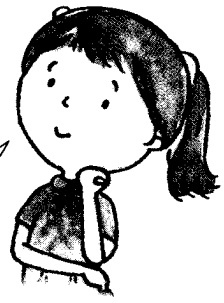
The side which is parallel to the side AD is _____.

How many rectangles with sides of different lengths can you form with 28 toothpicks? One example is shown below.



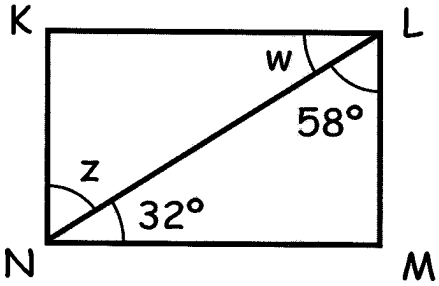
2. PQRS is a rectangle. $\angle RQS = 55°$.
What is $\angle PQS$?





$\angle PQR = 90°$
$\angle PQS = 90° - 55°$
$= 35°$

3. KLMN is a rectangle. Find $\angle w$ and $\angle z$.



$\angle KLM =$ ☐ °

$\angle w =$ ☐ ° − ☐ °

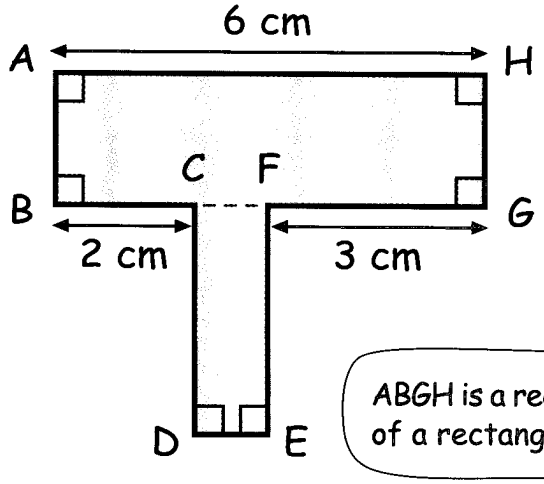
$=$ ☐ °

$\angle KNM =$ ☐ °

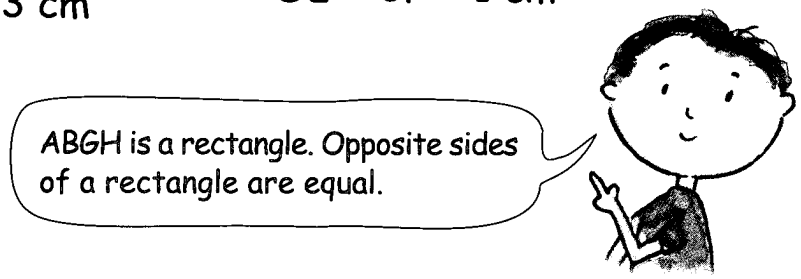
$\angle z =$ ☐ ° − ☐ °

$=$ ☐ °

4. ABGH and CDEF are rectangles.
Find the length of DE.

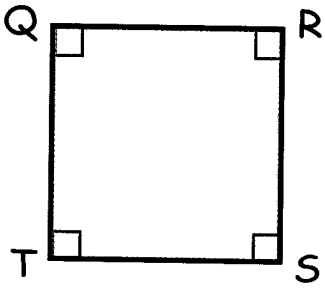


In the figure shown, DE = CF
BC + CF + FG = AH
BC + CF + FG = 6 cm
CF = 6 − 2 − 3
= 1 cm
DE = CF = 1 cm

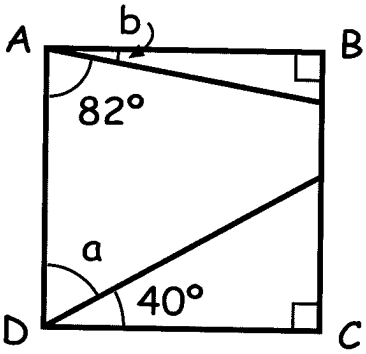


Let's Try .. Squares & Rectangles

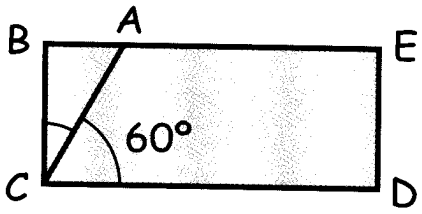
1. Name all the pairs of parallel lines and perpendicular lines in the square.



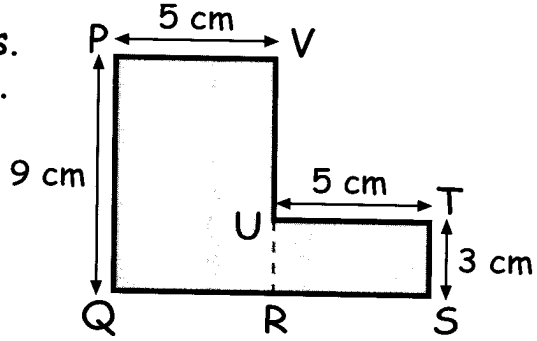
2. ABCD is a square. Find ∠a and ∠b.

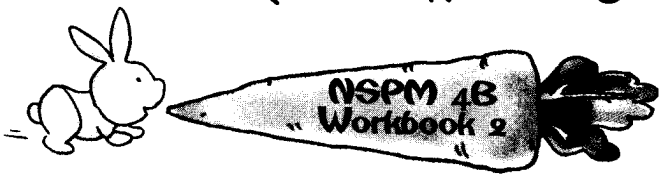


3. In the figure shown, BCDE is a rectangle. Given that ∠DCA = 60°, what is ∠BCA?



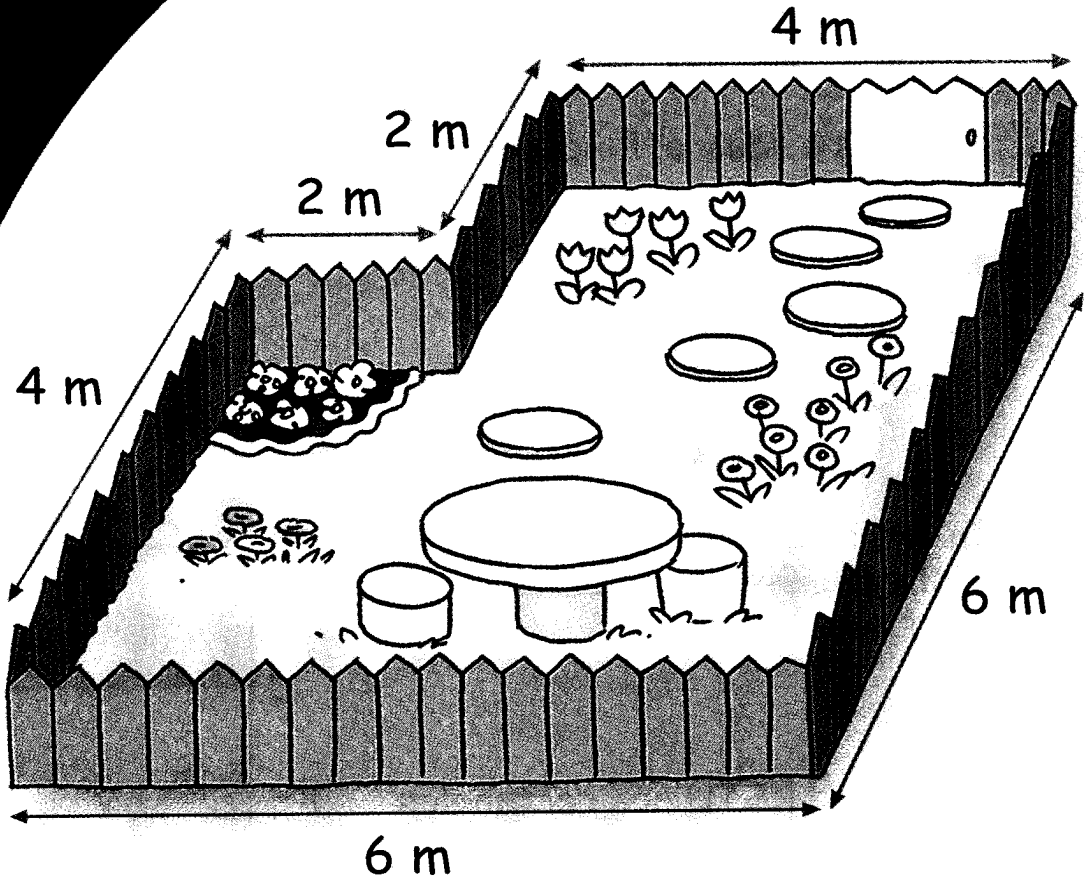
4. PQRV and RSTU are rectangles. Find the lengths of QS and UV.





Worksheets 40, 41
Practice 11

12 Area and Perimeter

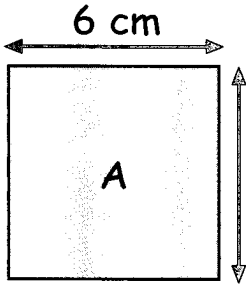


Do you know?

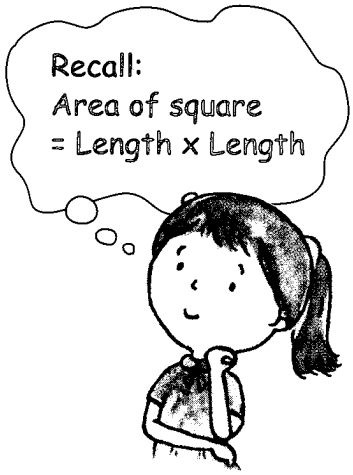
How do we find the perimeter and area of the garden?

Let's Learn .. Area and Perimeter of a Square

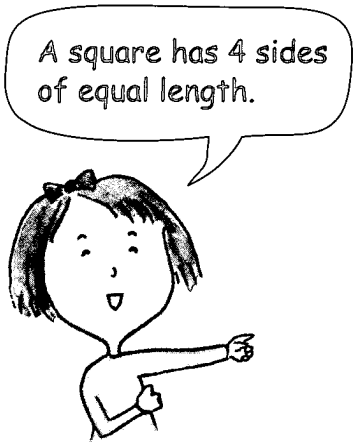
1. (a) Find the area of square A.



Area of square A
= 6 x 6
= 36 cm^2

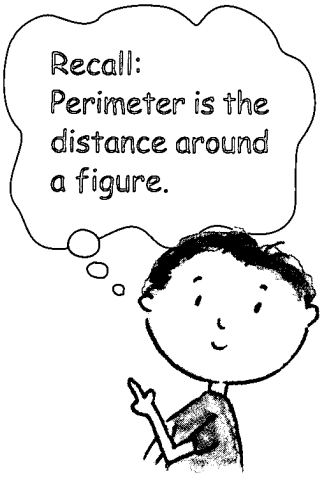


(b) What is the perimeter of square A?

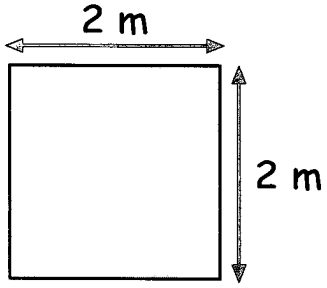


Perimeter of square
= 4 x Length

Perimeter of square A
= 4 x 6
= 24 cm



2. Find the area and perimeter of the square.



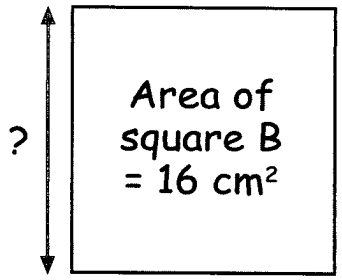
Area = ☐ x ☐

= ☐ m^2

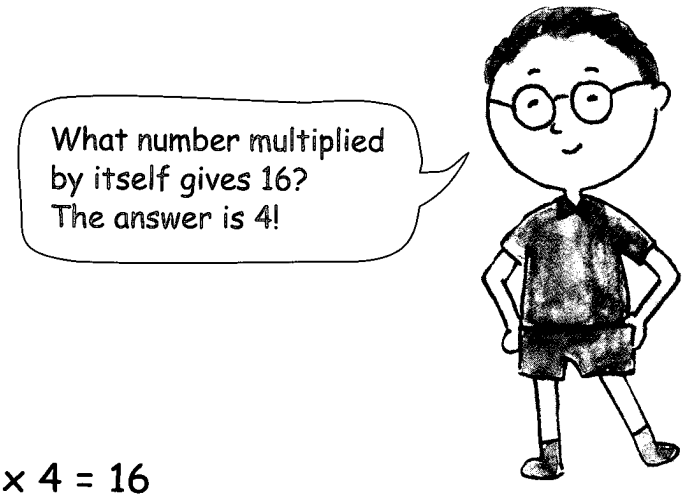
Perimeter = 4 x ☐

= ☐ m

3. Find the length of one side of square B.



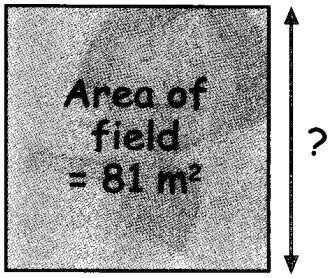
Area of square B = Length x Length
= 16 cm²



4 x 4 = 16

Length of square B = 4 cm

4. A square field has an area of 81 m².
   (a) What is the length of each side?
   (b) Find the perimeter of the field.



(a) Area of square = Length x Length

81 = ☐ x ☐

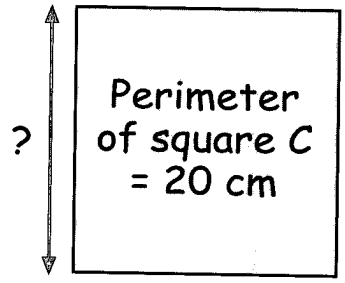
Length = ☐ m

(b) Perimeter = 4 x Length

= 4 x ☐

= ☐ m

5. Find the length of one side of square C.

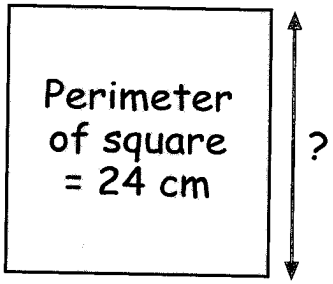


Perimeter of square C = 4 x Length
= 20 cm

Length = 20 ÷ 4
= 5

Length of square C = 5 cm

6. A square has a perimeter of 24 cm. What is its length and area?



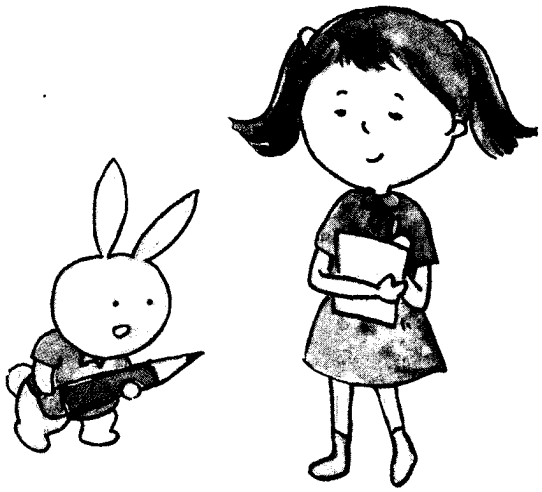
Perimeter of square C = ☐ x Length

Length = 24 ÷ ☐

= ☐ cm

Area = ☐ x ☐

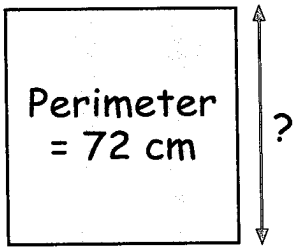
= ☐ cm^2



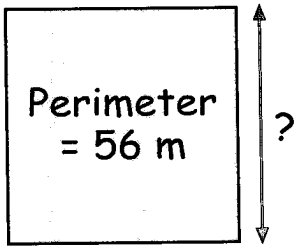
Let's Try .. Area and Perimeter of a Square

1. What is the length of one side of each square below? Find the area of each square.

(a)

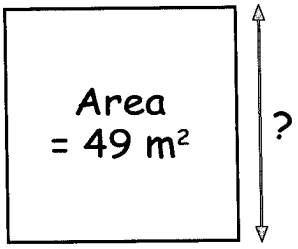


(b)

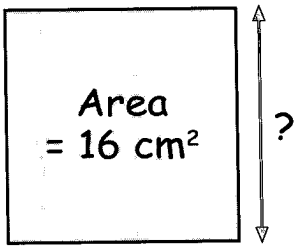


2. What is the length of one side of each square below? Find the perimeter of each square.

(a)



(b)

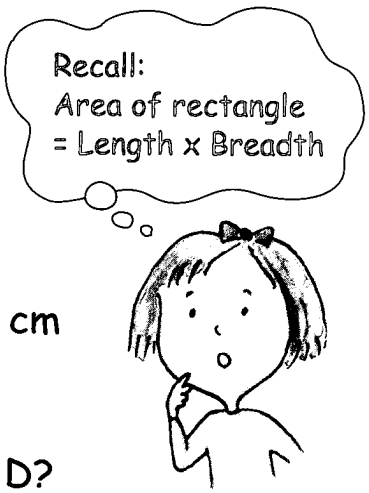


3. Mr Lim fenced a field in the shape of a square. If the area of this field is 64 m^2, how long is the fence?

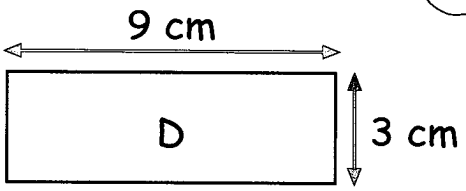
Worksheet 42

Let's Learn .·. Area and Perimeter of a Rectangle

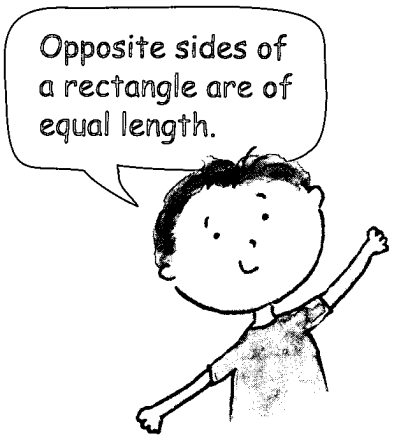
1. (a) Find the area of rectangle D.



Area of rectangle D
= 9 x 3
= 27 cm²



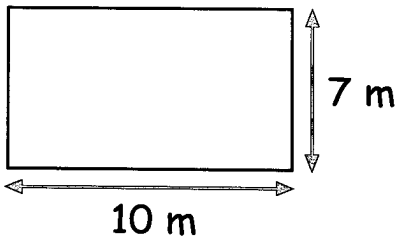
(b) What is the perimeter of rectangle D?



Perimeter of rectangle
= Length + Breadth + Length + Breadth

Perimeter of rectangle D
= 9 + 3 + 9 + 3
= 24 cm

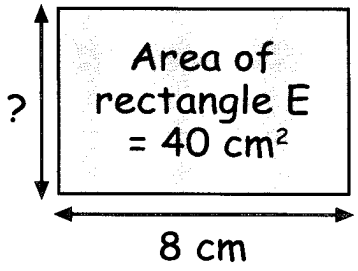
2. A rectangular classroom has a length of 10 m and a breadth of 7 m. What is its area and perimeter?



Area = ☐ x ☐
= ☐ m²

Perimeter = ☐ + ☐ + ☐ + ☐
= ☐ m

3. Find the breadth of rectangle E.



Area of rectangle E = Length x Breadth

Breadth = 40 ÷ 8
= 5 cm

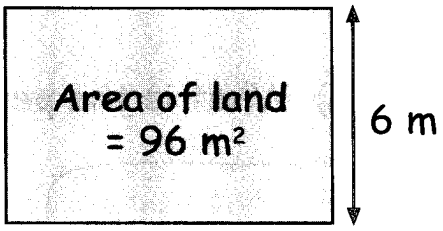
Breadth of rectangle E = 5 cm.

4. Find the length and perimeter of the rectangular plot of land.

Area of land = Length x Breadth

Length = ☐ ÷ 6

= ☐ m



Length of land = ☐ m

Perimeter of land = ☐ + ☐ + ☐ + ☐

= ☐ m

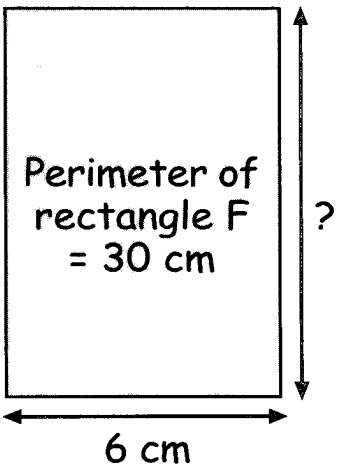
5. Find the length of rectangle F.

Perimeter of rectangle F
= Length + Breadth + Length + Breadth

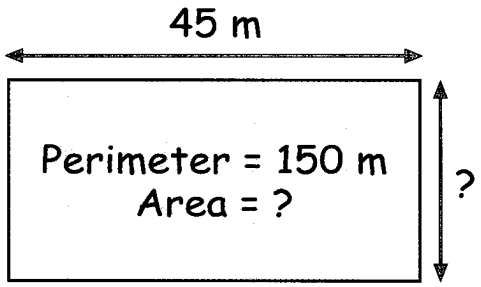
Length + Length = 30 – 6 – 6
= 18 cm

Length = 18 ÷ 2
= 9 cm

Length of rectangle F = 9 cm



6. A rectangular garden has a perimeter of 150 m. It has a length of 45 m. What is its breadth? What is its area?



Perimeter = Length + Breadth + Length + Breadth

Breadth + Breadth = ☐ − ☐ − ☐

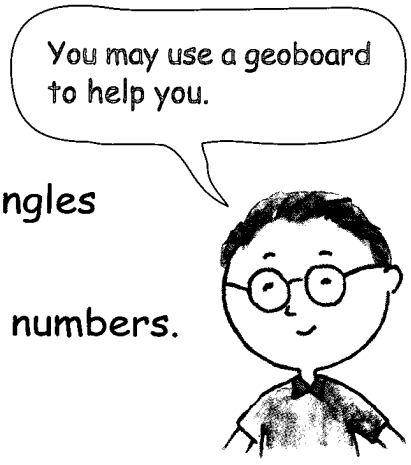
= ☐ m

Breadth = ☐ ÷ 2 = ☐ m

Area = Length x Breadth

= ☐ x ☐

= ☐ m^2



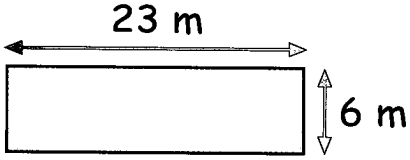
Work in pairs. How many different rectangles of area 24 cm^2 can you draw?

The length and breadth must be in whole numbers.

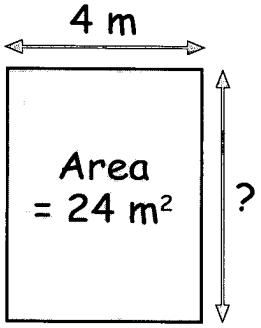
All these rectangles have the same area.
But do they have the same perimeter?

Let's Try .:. Area and Perimeter of a Rectangle

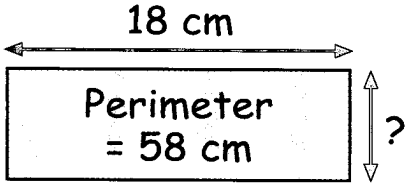
1. What is the area and perimeter of the rectangular field shown?



2. Find the length and perimeter of the rectangle shown.



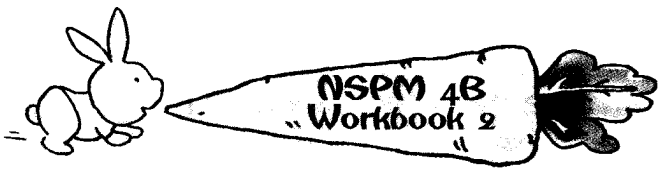
3. Find the breadth and area of the figure shown.



4. Find the length of a rectangular figure if it has a breadth of 6 cm and an area of 156 cm^2.

5. Find the breadth of a rectangle given that the length of the rectangle is 12 cm and the perimeter is 40 cm.

6. The breadth of a rectangular swimming pool is 43 m. The length is longer than the breadth by 22 m. What is the area and perimeter of the swimming pool?



Worksheet 43

Area of Composite Figures

1. Find the area of Figure 1.

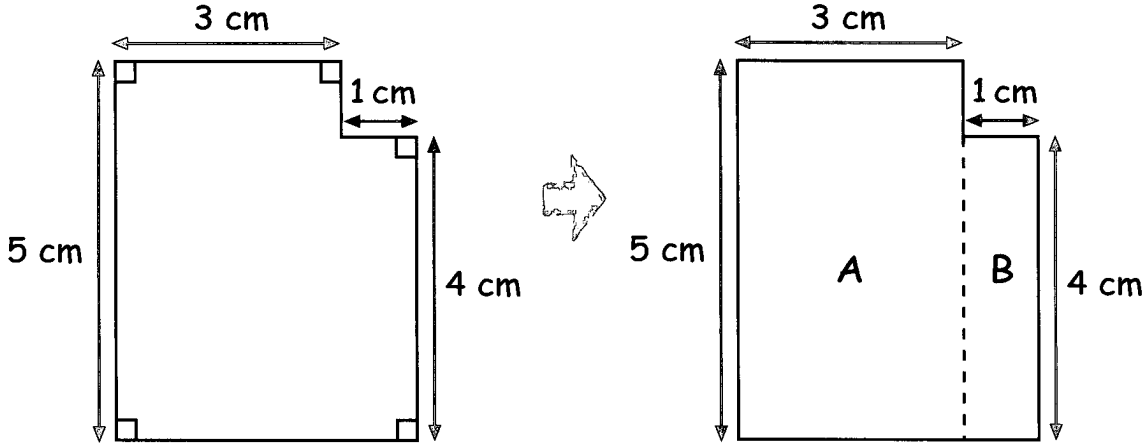
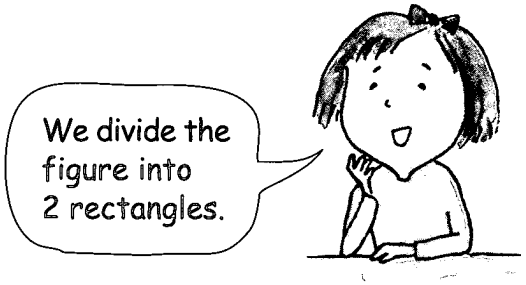
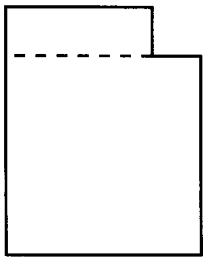


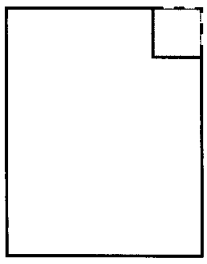
Figure 1

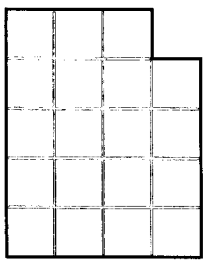
Area of rectangle A = 5 x 3
= 15 cm²
Area of rectangle B = 4 x 1
= 4 cm²
Area of Figure 1 = 15 + 4
= 19 cm²



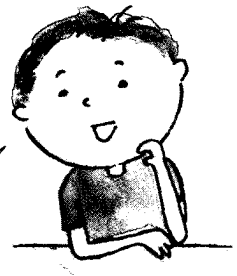
Are there other ways to find the area of Figure 1?







2. Find the area of Figure 2.



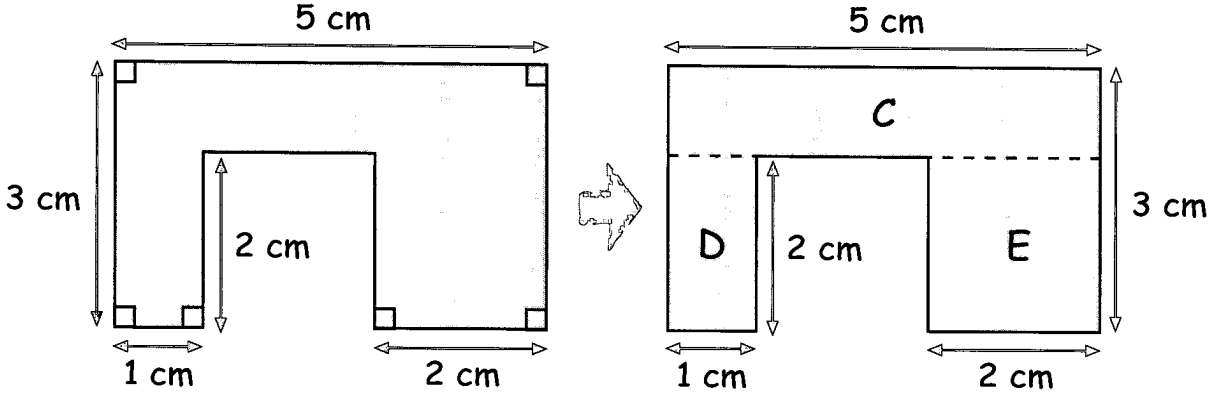
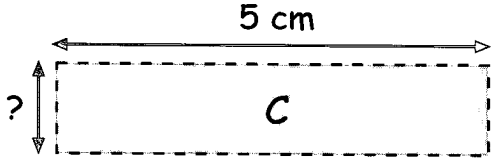
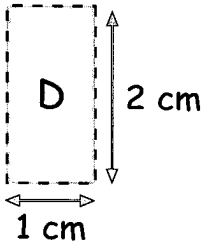


Figure 2

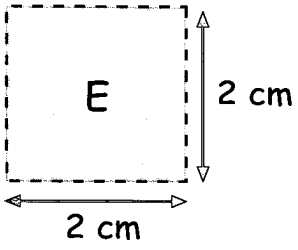


Breadth of rectangle C = 3 - 2
= 1 cm

Area of rectangle C = 5 x 1
= 5 cm^2



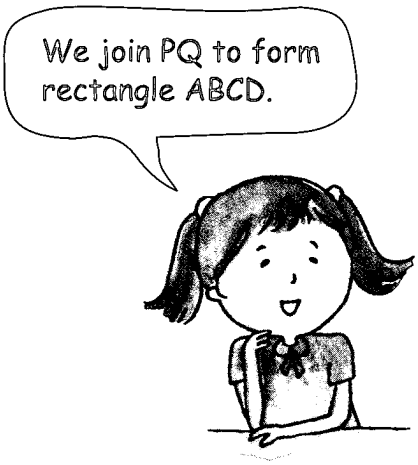
Area of rectangle D = 2 x 1
= 2 cm^2



Area of square E = 2 x 2
= 4 cm^2

Area of Figure 2 = 5 + 2 + 4
= 11 cm^2

3. Find the area of Figure 3.



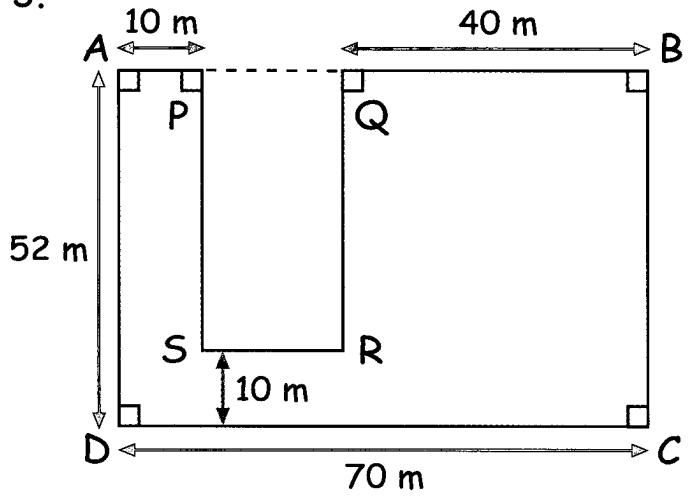


Figure 3

Area of rectangle ABCD = 70 x 52
= 3640 m^2

Length of rectangle PQRS = 52 - 10
= 42 m

Breadth of rectangle PQRS = 70 - 40 - 10
= 20 m

Area of rectangle PQRS = 42 x 20
= 840 m^2

Area of Figure 3
= Area of rectangle ABCD - Area of rectangle PQRS
= 3640 - 840
= 2800 m^2

Compare the methods used to find the areas of Figures 2 and 3. Discuss with your classmates to show and explain another method to solve each of them.

4. Figure 4 is made up of two squares.
Find the area of Figure 4.

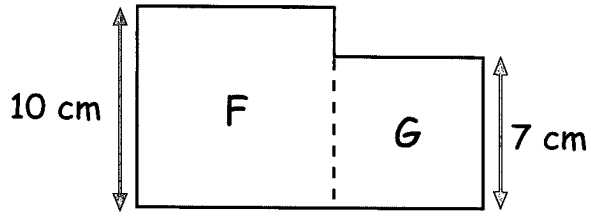


Figure 4

Area of square F = ☐ × ☐

= ☐ cm^2

Area of square G = ☐ × ☐

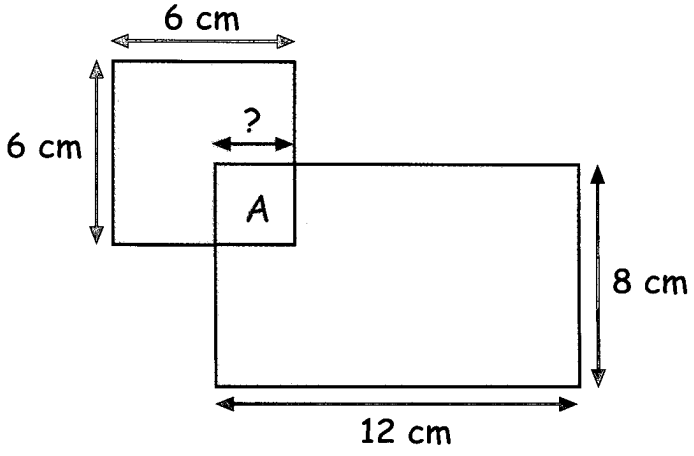
= ☐ cm^2

Area of Figure 4 = Area of square F + Area of square G

= ☐ + ☐

= ☐ cm^2

Two cards overlap at A as shown in the figure below. The shaded area is 116 cm^2.



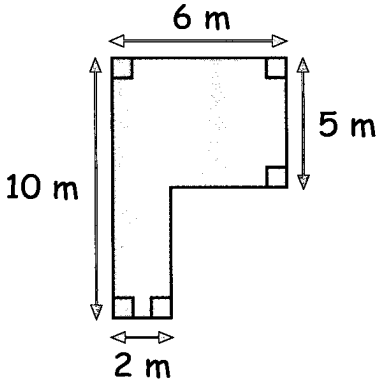
What is the area of the overlap part, A?

If the overlap part, A, is a square, what is its length?

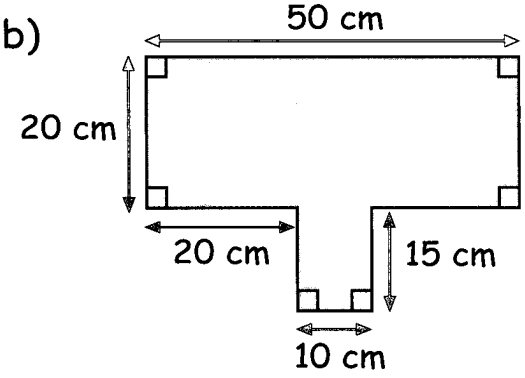
Let's Try .. Area of Composite Figures

Find the area of the following figures.

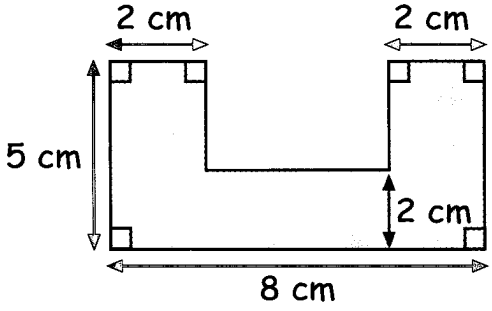
(a)



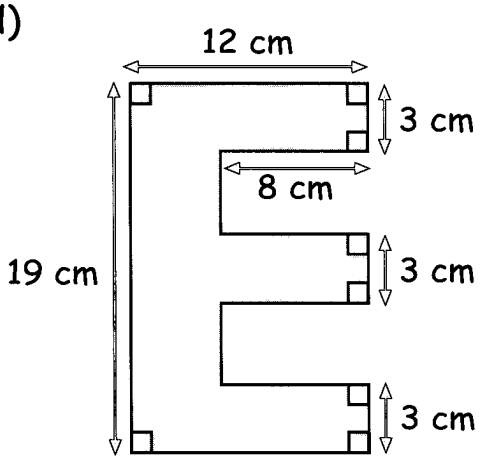
(b)



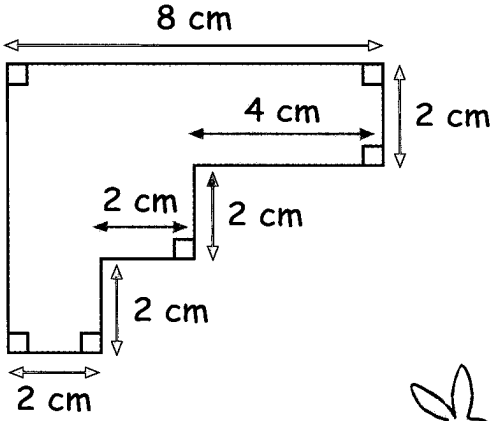
(c)

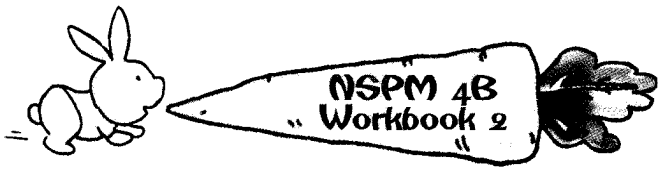


(d)



(e)

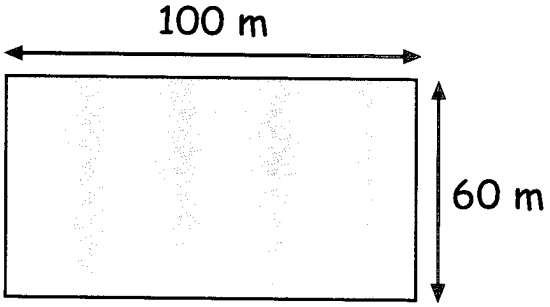


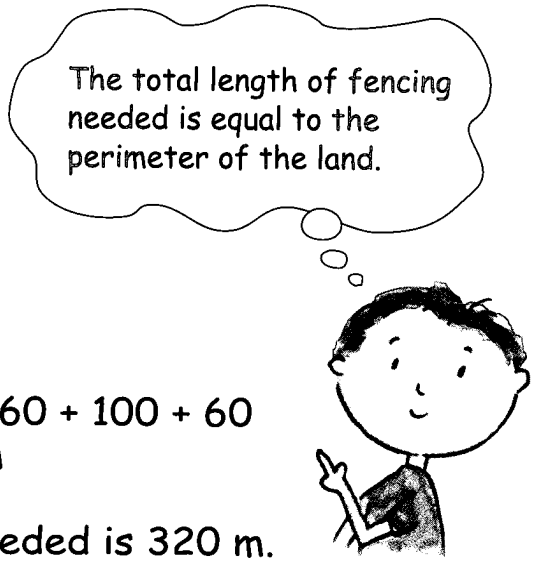


Worksheet 44

Let's Learn .·. Word Problems

1. A rectangular plot of land 100 m long and 60 m wide is to be completely fenced in. What is the total length of fencing needed for this job?





Perimeter of the land = 100 + 60 + 100 + 60
= 320 m

The total length of fencing needed is 320 m.

2. A carpentry shop sells plywood at \$30 per m^2. John wants to buy a rectangular piece of plywood 2 m long and 1 m wide. How much will John have to pay if he buys his plywood from this carpentry shop?

Area of rectangular piece of plywood = ☐ x ☐

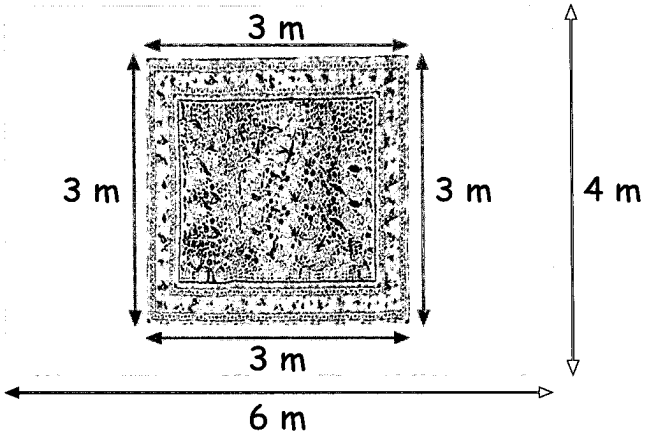
= ☐ m^2

Cost of plywood = \$ ☐ x ☐

= \$ ☐

John will have to pay ☐ for the plywood.

3. A rectangular room is 6 m long and 4 m wide. The floor is covered with a square carpet of side 3 m. Find the area of the floor not covered by the carpet.



Area of room
= Length x Breadth
= 6 x 4
= 24 m^2

Area of carpet
= Length x Length
= 3 x 3
= 9 m^2

Area of floor not covered by carpet
= 24 - 9
= 15 m^2

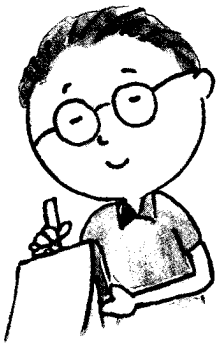
The area of the floor not covered by the carpet is 15 m^2.

4. A 4R photo measures 15 cm by 10 cm. A 3R photo measures 13 cm by 9 cm. Find the difference in area of the two sizes of photos.

Area of 4R photo = ☐ x ☐
= ☐ cm^2

Area of 3R photo = ☐ x ☐
= ☐ cm^2

Difference in area = ☐ x ☐
= ☐ cm^2



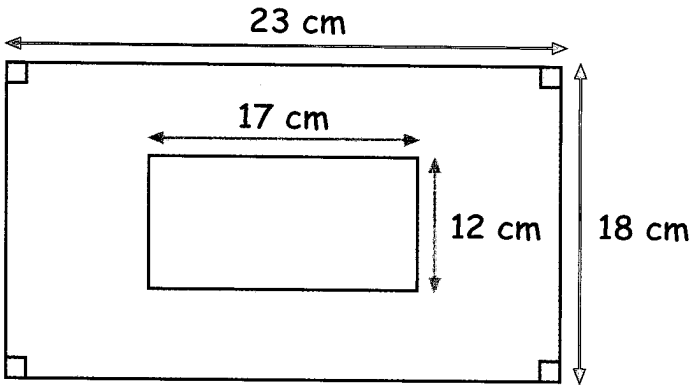
The difference in area of the two sizes of photos is ☐ cm^2.

Let's Try .·. Word Problems

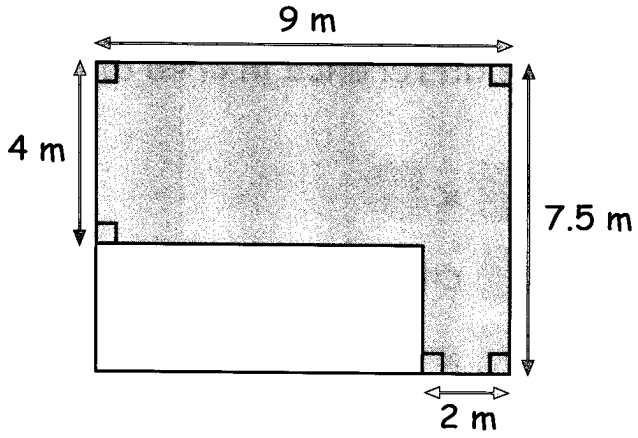
1. The length of a rectangle is 2 times its breadth. If the length is 6 m, find the area of the rectangle.

2. Find the area of the shaded part in each figure.

(a)



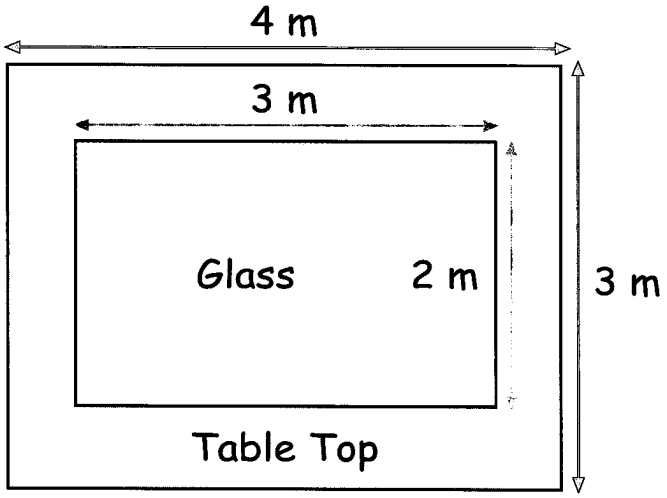
(b)



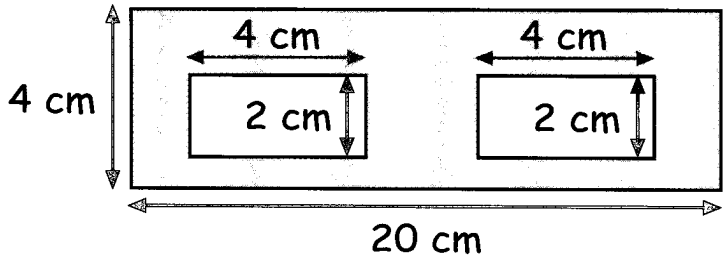
3. A rectangular wall measures 15 m by 12 m. What is the cost of painting the wall if it costs $8 to paint 1 m^2?

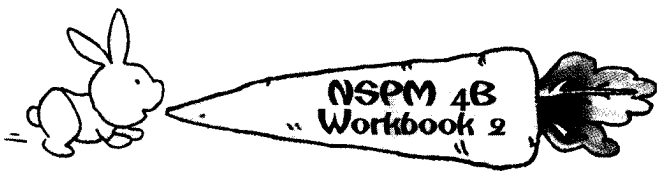
4. Devi bought a piece of wire 4 m long. She used the wire to form squares of side 2 cm. How many squares can she make?

5. A rectangular table top 4 m long and 3 m wide is to be covered by a piece of glass 3 m long and 2 m wide. Find the area of the part of the table top which is not covered by the glass.



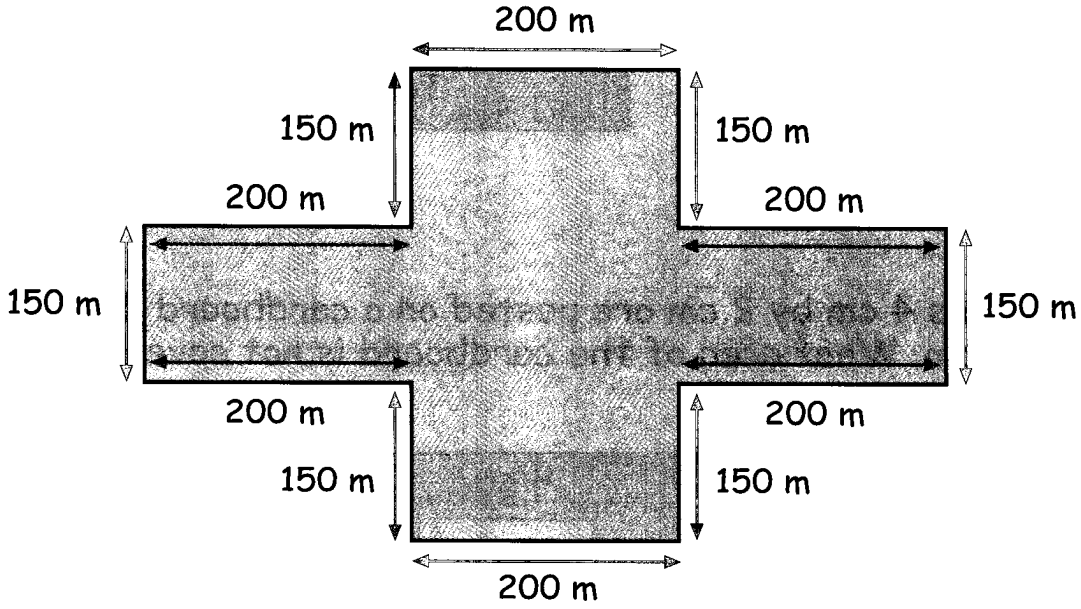
6. 2 cards 4 cm by 2 cm are pasted on a cardboard 20 cm by 4 cm. What area of the cardboard is not covered?



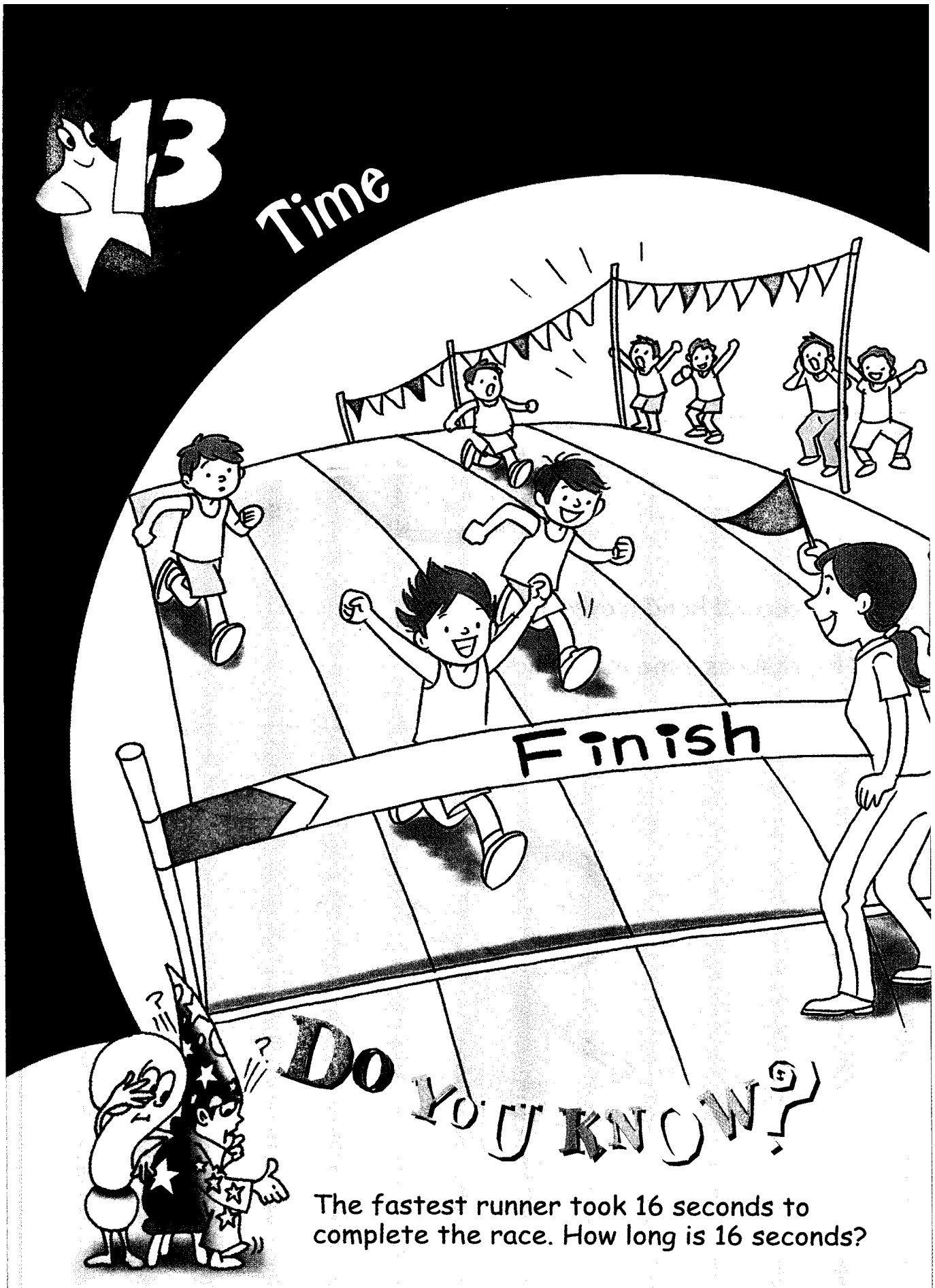


Worksheet 45
Practice 12

A farmer had a piece of land which was 'cross' shaped. Before he died, he divided the land among his 4 sons such that all 4 of them received parts of the land of the same area and shape. How did the farmer divide the piece of land? Suggest ways to do so.



13 Time

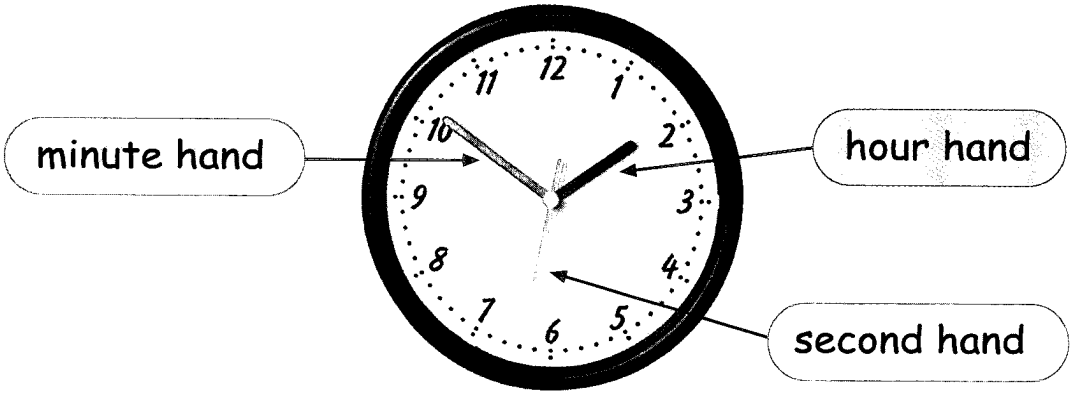


Do You Know?

The fastest runner took 16 seconds to complete the race. How long is 16 seconds?

Let's Learn .•. Measuring Time in Seconds

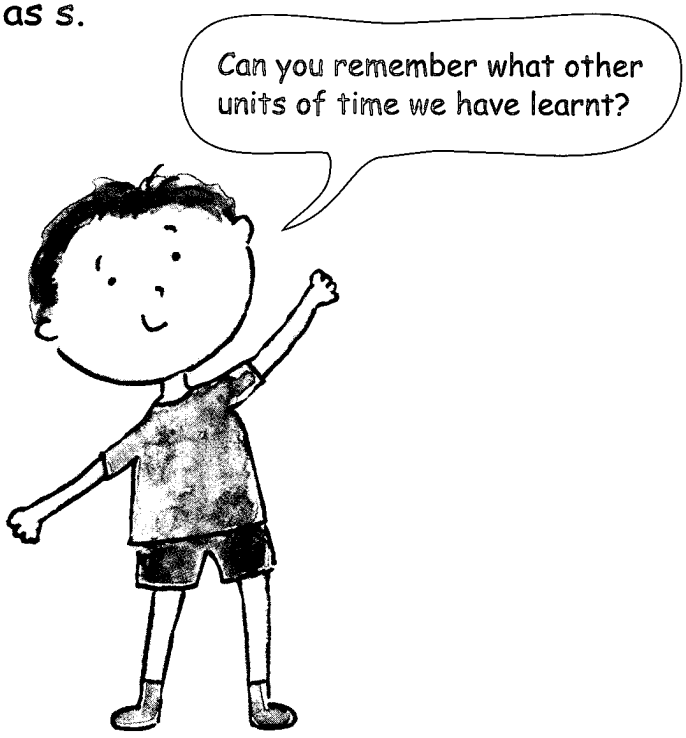
Look at the clock below.



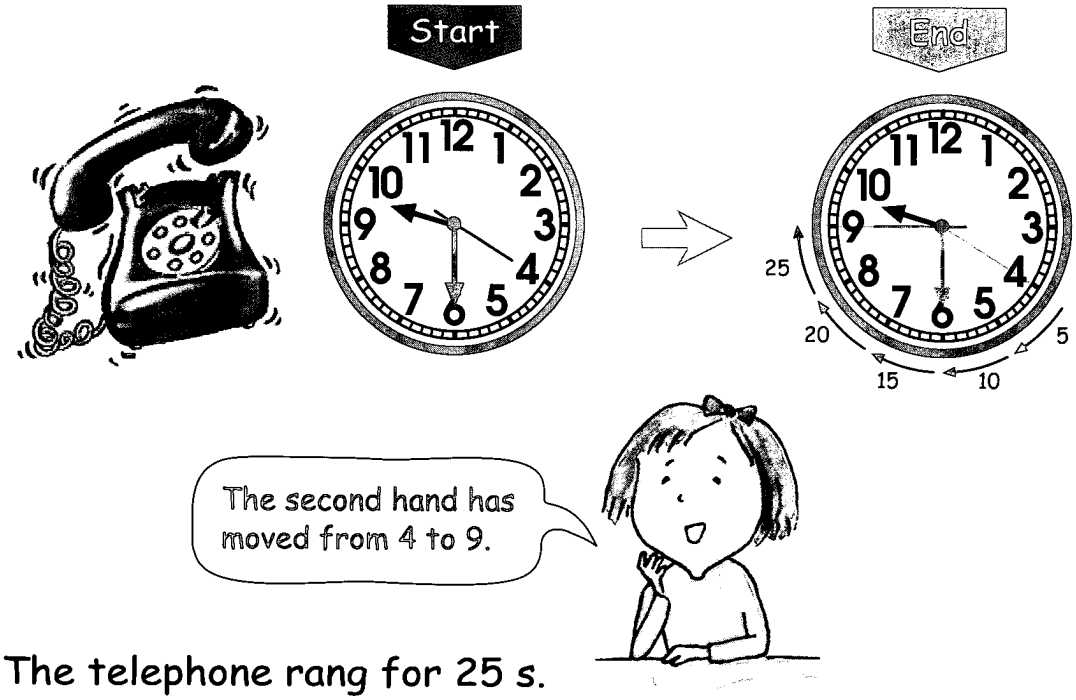
The second hand moves the fastest.

It measures time in seconds.

We write second as s.

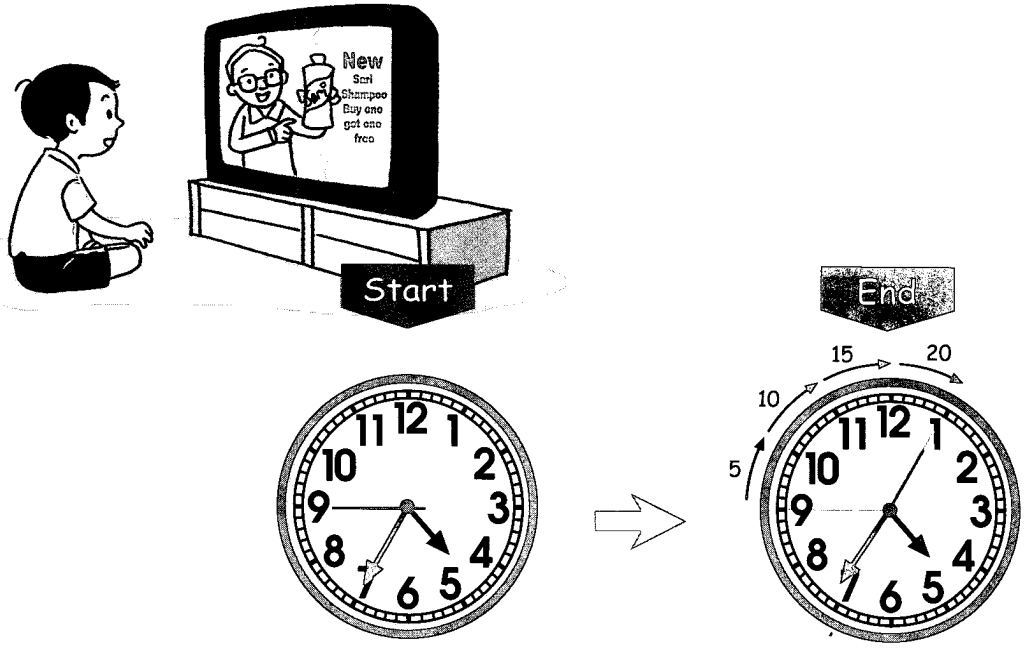


1. Look at the clock below.
For how long did the telephone ring?



The telephone rang for 25 s.

2.

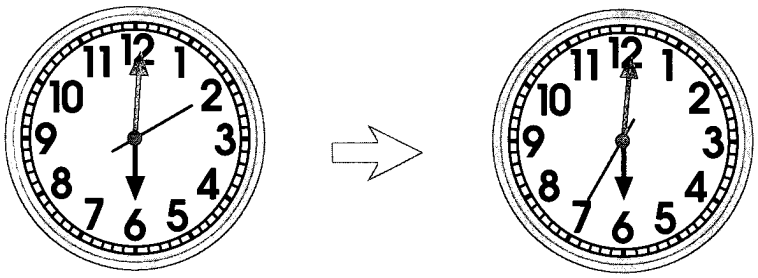


The advertisement on television lasted ☐ s.

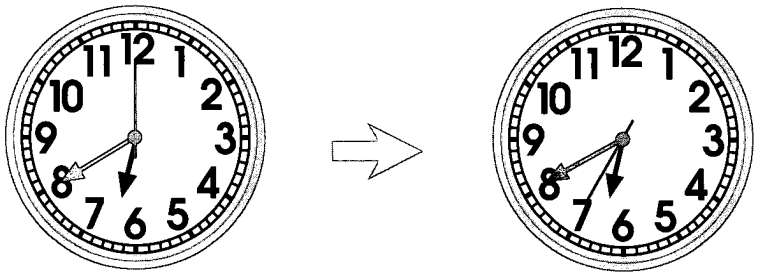
Let's Try .·. Measuring Time in Seconds

How many seconds has passed in each case?

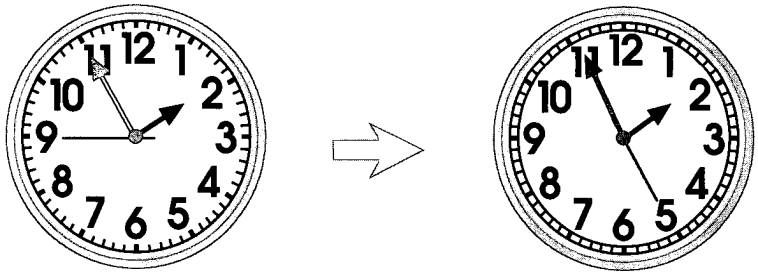
(a)



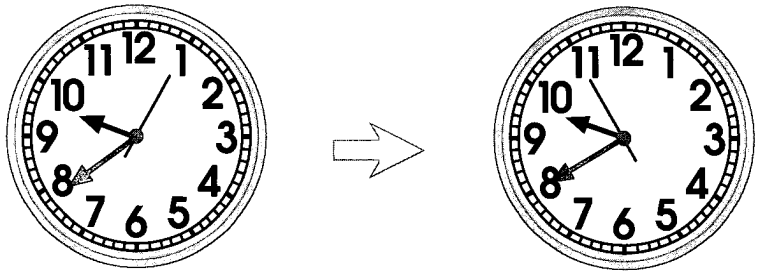
(b)

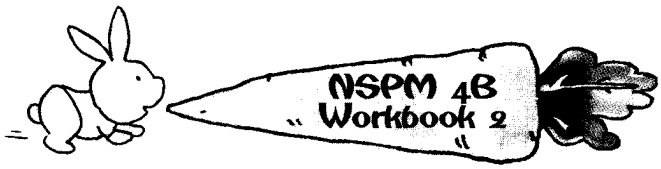


(c)



(d)





Worksheet 46

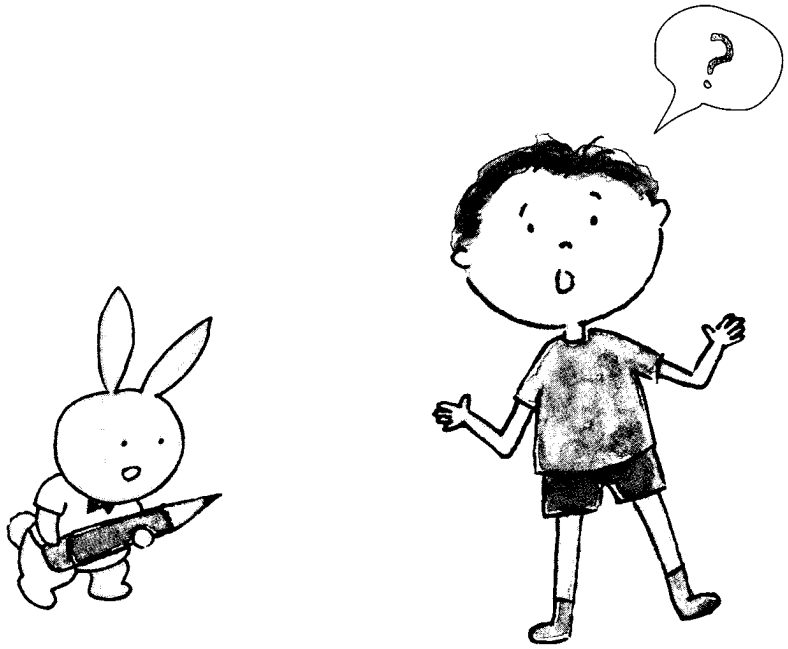
A We take about 1 second to blink our eyes. What other things can we do in 1 second?

B Observe the minute hand when the second hand makes 1 complete round.

How much does the minute hand move when the second hand has made 1 complete round?

What is the relation between minutes and seconds?

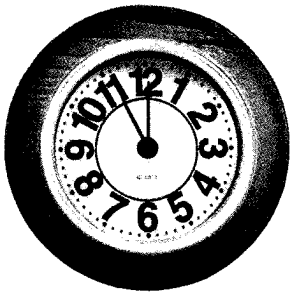
☐ min = ☐ s



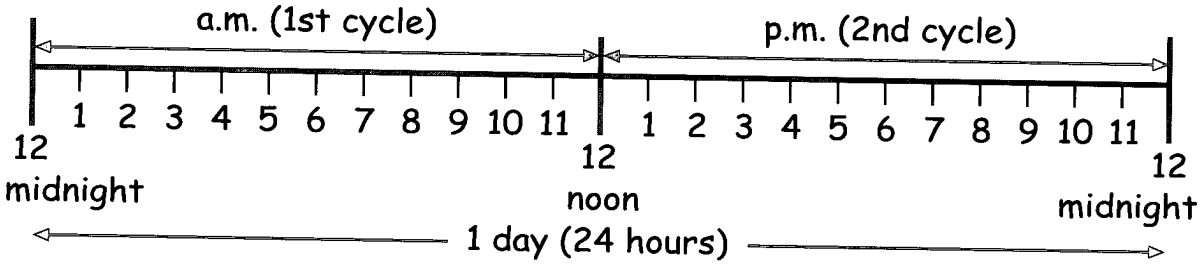
Let's Learn 24-Hour Clock

12-hour clock

This clock shows time in a 12-hour cycle.

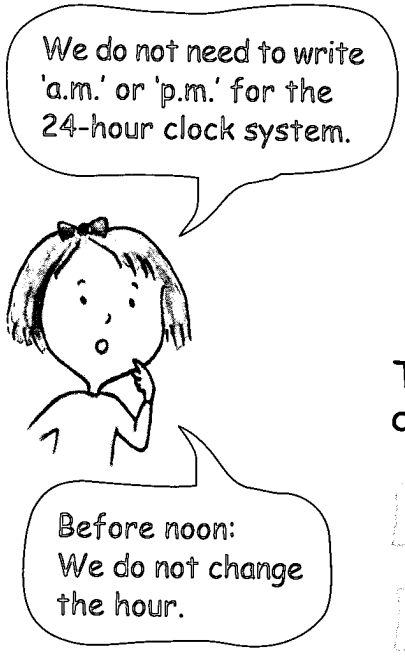


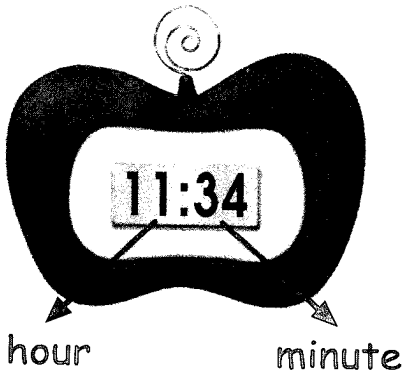
For a complete day of 24 hours, the hour hand has to turn 2 complete cycles of 12 hours each as shown below.



24-hour clock

1.



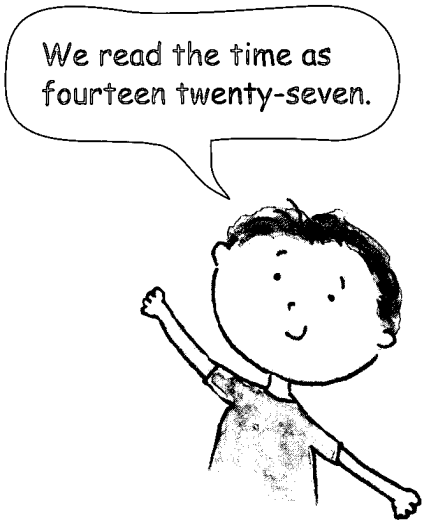


The time shown on the digital clock is 11 34.

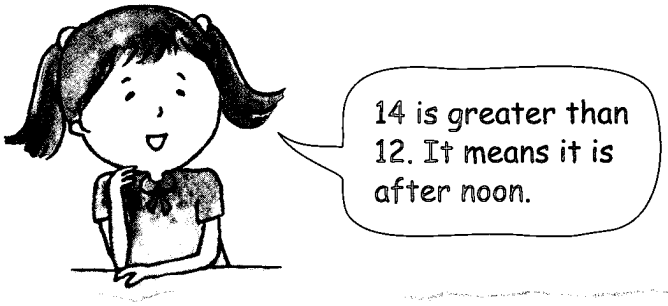
24-hour clock 1 1 3 4

12-hour clock 1 1 . 3 4 a.m.

2.



This digital clock shows 14 27.



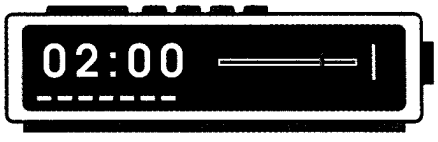
24-hour clock	1	4		2	7		
	-12 ↓			↓			
12-hour clock	2	.	2	7	p.m.		

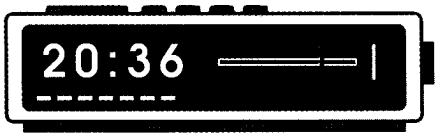
3. Try these.

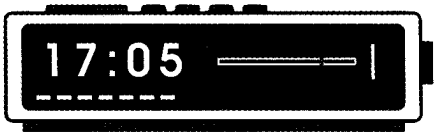
(a) 09 05 ⟶ 9.05 ☐

(b) 15 36 ⟶ ☐ p.m.

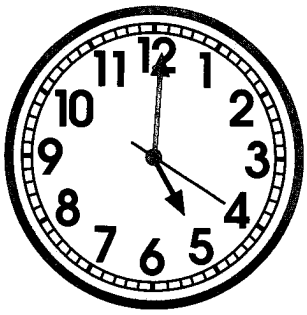
4. How do you read these?







5. Can you tell 5 p.m. using the 24-hour clock?



12-hour clock	5	.	0	0	p.m.
	↓ +12		↓		
24-hour clock	1 7		0	0	

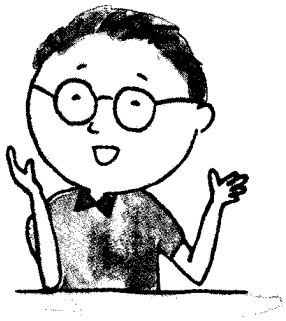
6. What is 1.49 p.m. using the 24-hour clock?

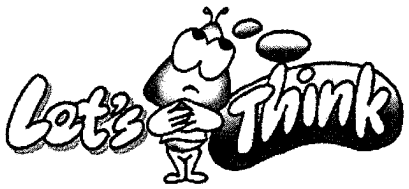
12-hour clock	1	.	4	9	p.m.
	+12 ↓		↓		
24-hour clock	☐		☐		

7. Try these.

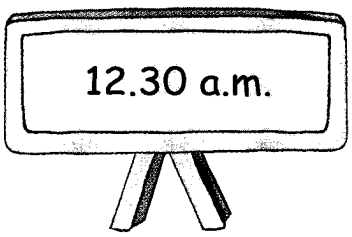
(a) 10.15 p.m. ⟶ ☐

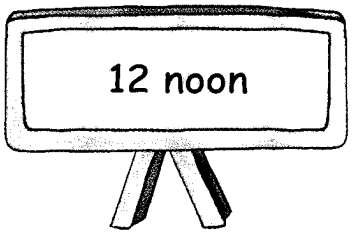
(b) 2.45 a.m. ⟶ ☐



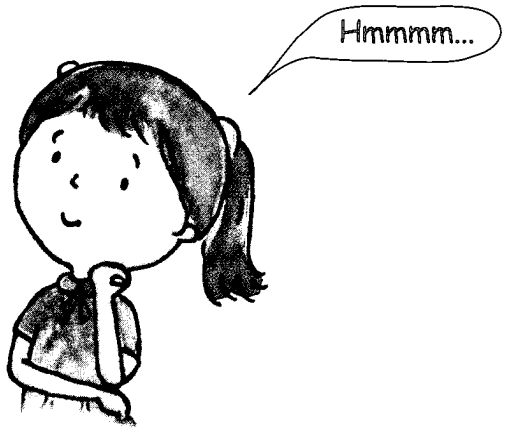


A How do we tell these times using the 24-hour clock system?



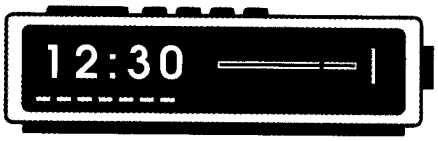
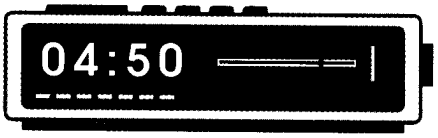
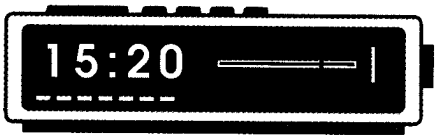


◯ Which of the following shows 12 midnight using the 24-hour system?

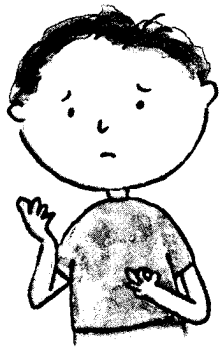


Let's Try 24-Hour Clock

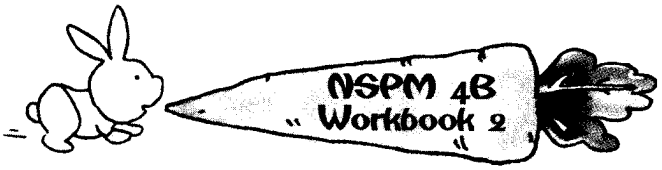
1. Tell the time on the 12-hour clock.

	24-hour clock		12-hour clock
(a)		⇨	☐
(b)		⇨	☐
(c)		⇨	☐

2. Tell the time on the 24-hour clock.



(a)	☐	⇦	1.36 a.m.
(b)	☐	⇦	2.55 p.m.
(c)	☐	⇦	11.45 p.m.

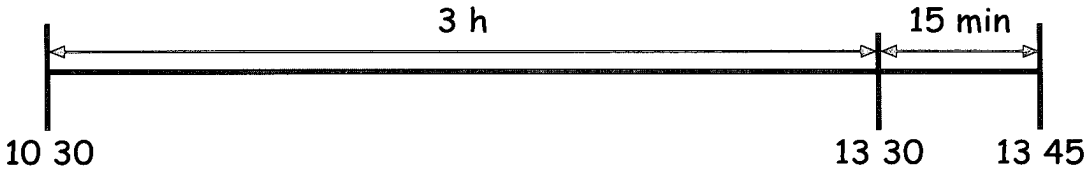


Worksheet 47

Let's Learn .•. Duration of Time

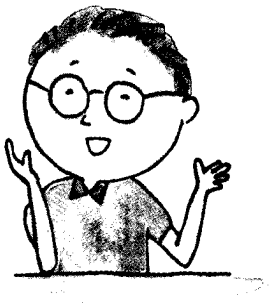
The duration of time is the difference between the ending time and the starting time.

1. A test started at 10 30 and ended at 13 45. How long did the test last?

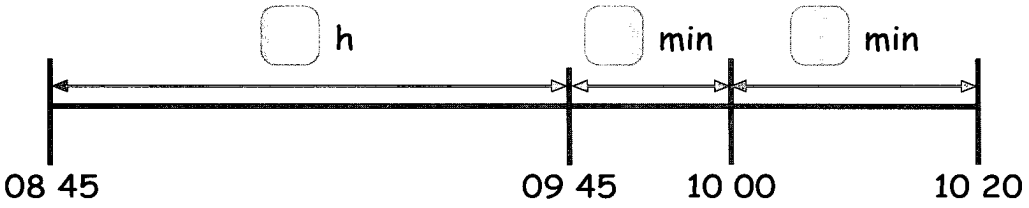


From 10 30 to 13 30 = 3 h
From 13 30 to 13 45 = 15 min
3 h + 15 min = 3 h 15 min

The test lasted 3 h 15 min.



2. What is the duration from 08 45 to 10 20?

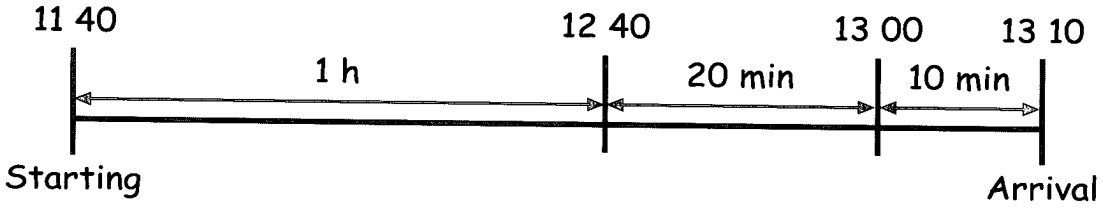


☐ h + ☐ min + ☐ min
= ☐ h + ☐ min

The duration from 08 45 to 10 20 is ☐ h ☐ min.

3. A bus left the station at 11 40. It arrived at the destination 1 h 30 min later. At what time did the bus arrive at the destination?

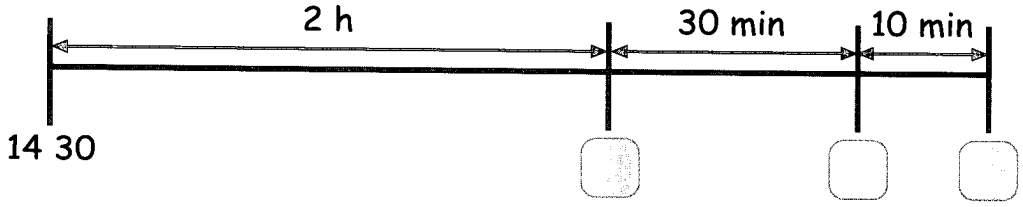
The time of arrival can be determined by the following time-chart.



1 h after 11 40 is 12 40.
30 min after 12 40 is 13 10.

The bus arrived at 13 10.

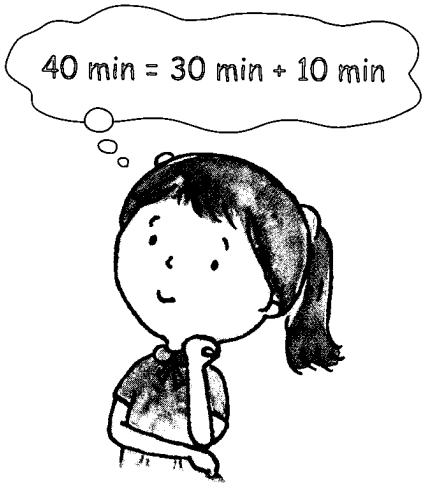
4. It is 14 30 now. What is the time 2 h 40 min later?



2 h after 14 30 is ____.

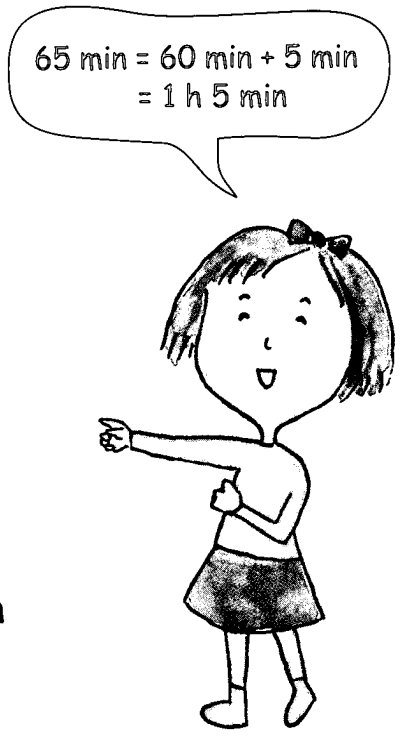
40 min after ____ is ____.

It is ____ 2 h 40 min later.



Let's Learn .:. Word Problems

1. During weekend, Mary spent 1 h 45 playing and 1 h 20 min studying. She spent 25 min less practising on the piano than studying. How long did Mary spend on playing, studying and practising on the piano altogether during weekend?



STEP 1 Find the total time spent on playing and studying.

1 h 45 min + 1 h 20 min = 2 h 65 min
= 3 h 5 min

STEP 2 Find the time spent on practising piano.

1 h 20 min – 25 min = 80 min – 25 min
= 55 min

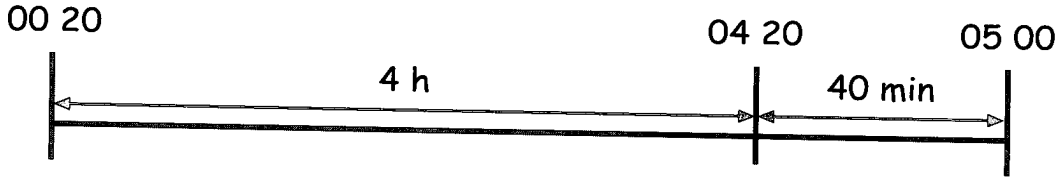
STEP 3 Find the total time spent on playing, studying and practising on the piano.

3 h 5 min + 55 min = 3 h 60 min
= 4 h

Mary spent a total of 4 h on playing, studying and practising on the piano during weekend.

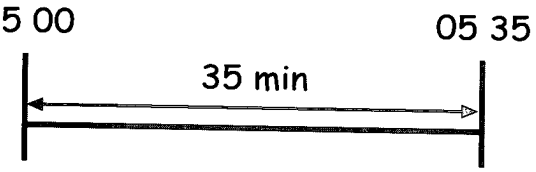
2. Jimmy travelled to Beijing via Xiamen by air. The plane left Changi Airport at 00 20. It took 4 h 40 min to arrive at Xiamen. 35 min later, the plane continued the journey and it took another 1 h 10 min to arrive at Beijing. What time did the plane arrive at Beijing?

STEP 1



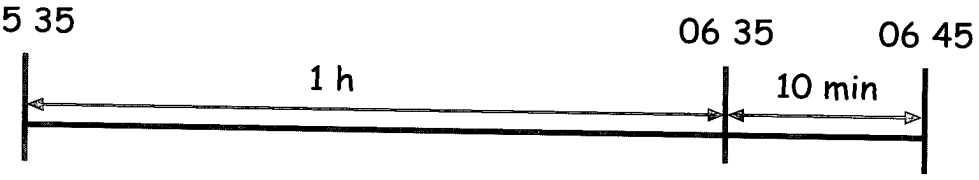
At 05 00, the plane arrived at Xiamen.

STEP 2



At 05 35, the plane left Xiamen.

STEP 3



The plane arrived at Beijing at 06 45.

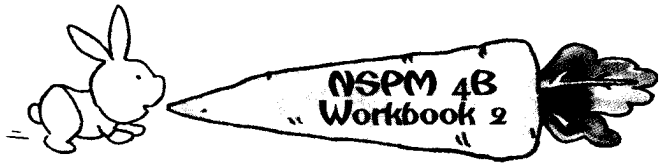
Duration of Time & Word Problems

1. A bus left the bus station at 10 15. It arrived at the destination after travelling for 3 h 50 min. Find the time of arrival.

2. Peter travelled overseas by air. The plane left Changi Airport at 06 15. The whole journey took 7 h 40 min. At what time die Peter arrive at his destination?

3. During one weekend, John spent 3 h 40 min doing his homework and 55 min watching television. If he spent 35 min more on surfing the internet than on watching television, how much time did he spend on the three activities?

4. Jane travelled to Kuala Lumpur by bus last weekend. The bus left Singaore at 08 30. After travelling for 3 h 10 min, the bus stopped at a coffee shop. 45 min later, the bus continued the journey to Kuala Lumpur. The bus arrived at Kuala Lumpur at 13 20. How long did it take the bus to travel from the coffee shop to Kuala Lumpur?

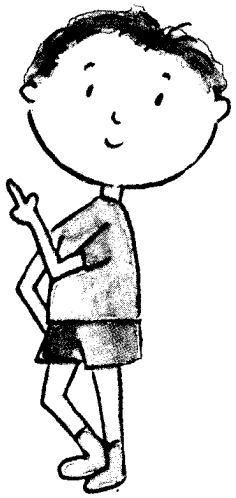


Worksheet 48
Practice 13

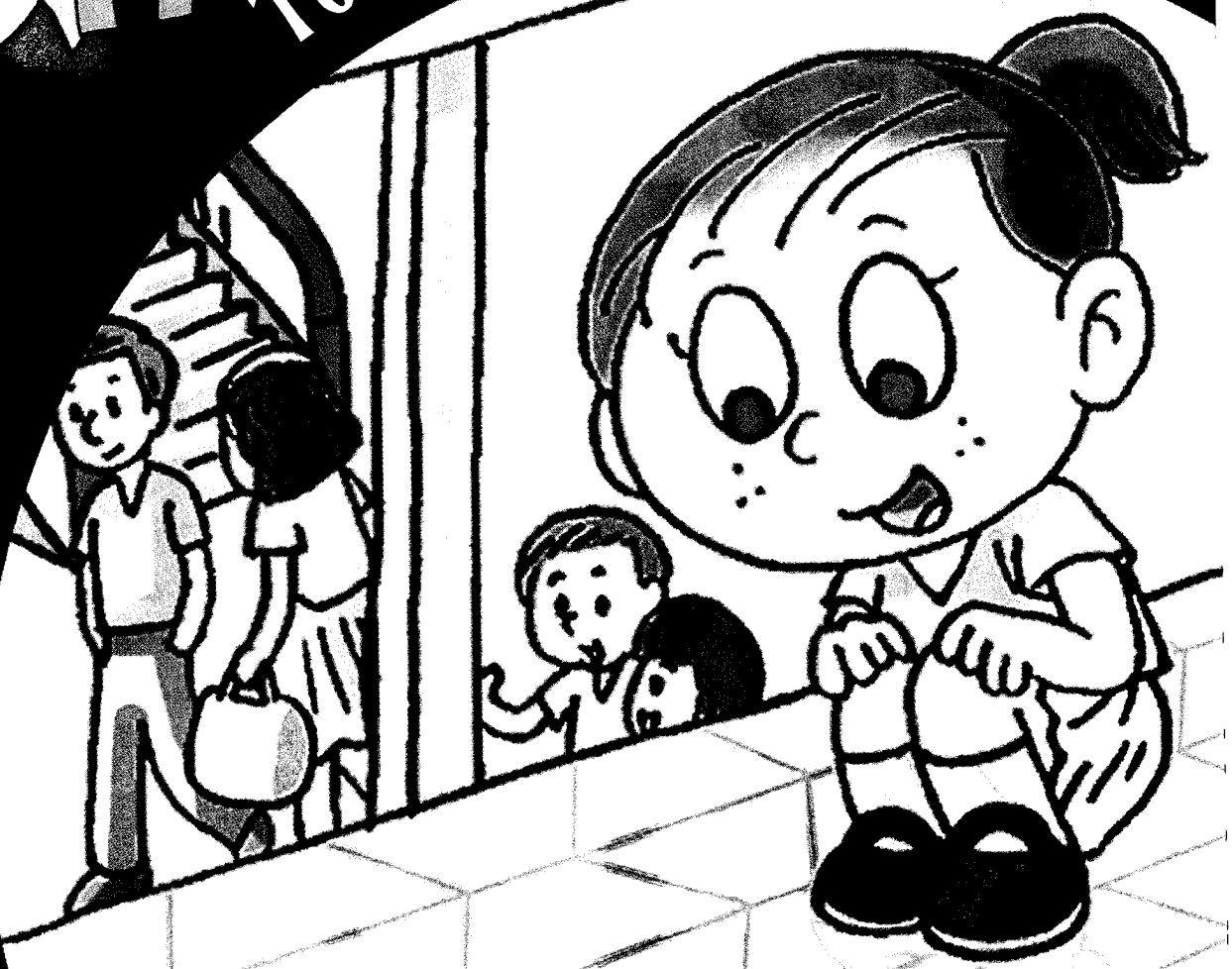
The table below shows the time when a machine started running and the time it stopped.

Using a stopwatch, find out how long (in seconds) you take to find the duration in each case.

Machine started at	Machine stopped at	Time to calculate the duration
08 00	17 30	
08 30	20 00	
07 30	22 20	



14 Tessellations



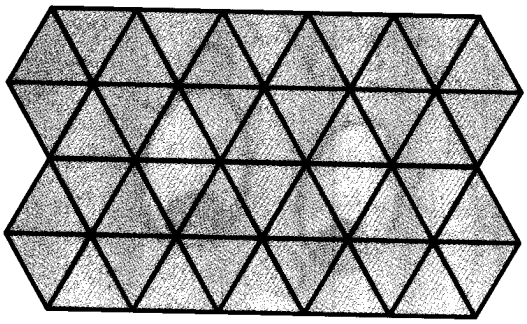
Do You Know?

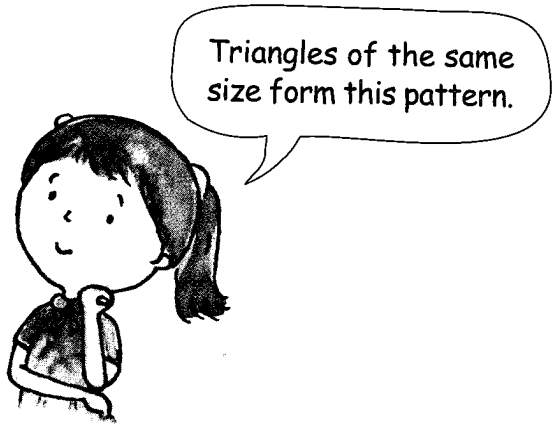
Look at the pattern of the floor tiles.
What do you notice?

Let's Learn .. Recognising Tessellations

We can use shapes to make patterns.

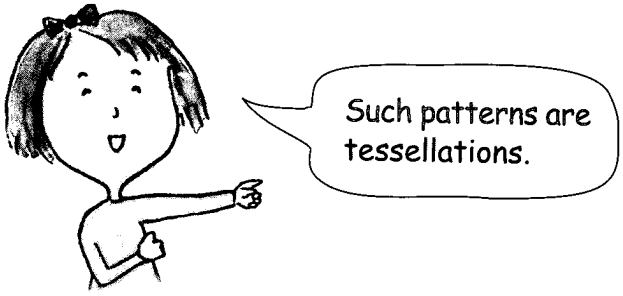
Look at the pattern below.
What do you notice?





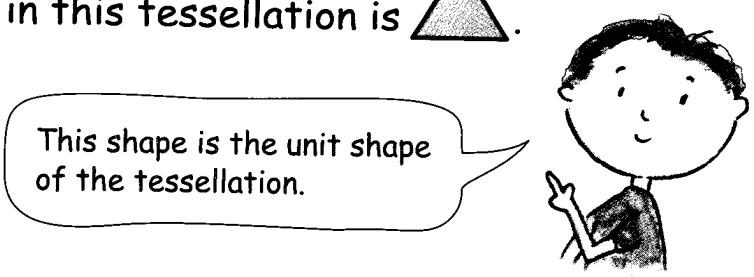
There are no gaps in between the triangles.

The triangles do not overlap each other.

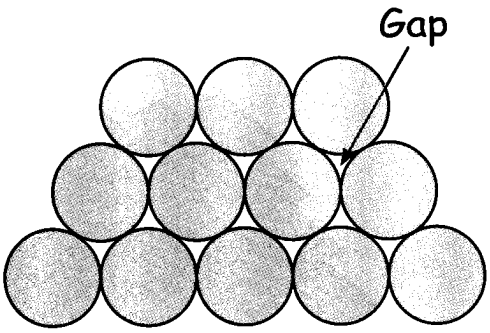


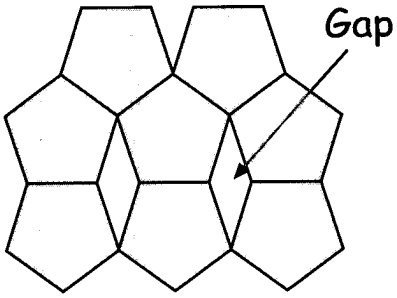
This tessellation is made of only one shape.

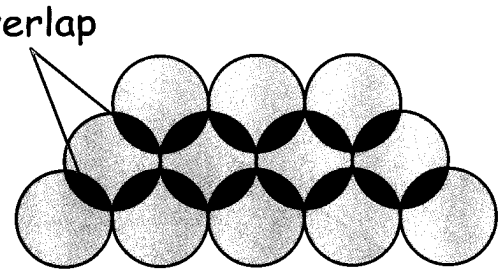
The shape that is used in this tessellation is  .

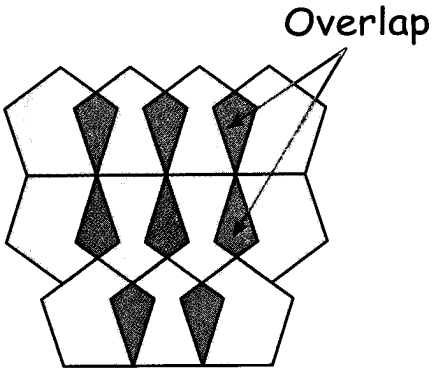


1. Look at the patterns below. They are made of shapes of the same size. Are they tessellations?

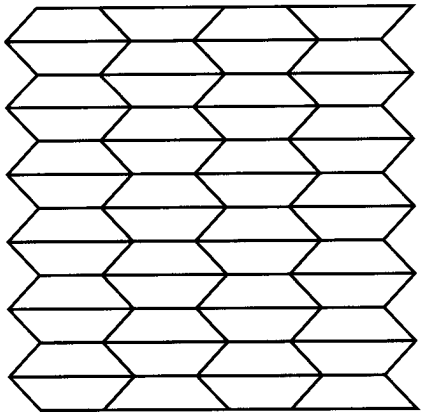


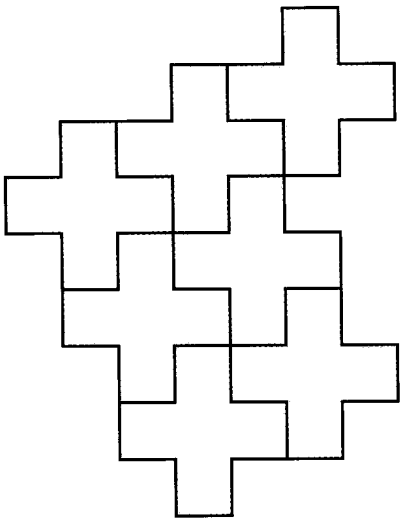




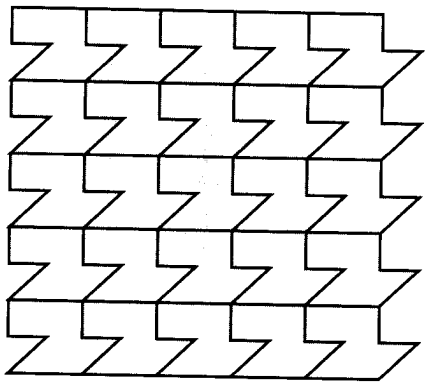


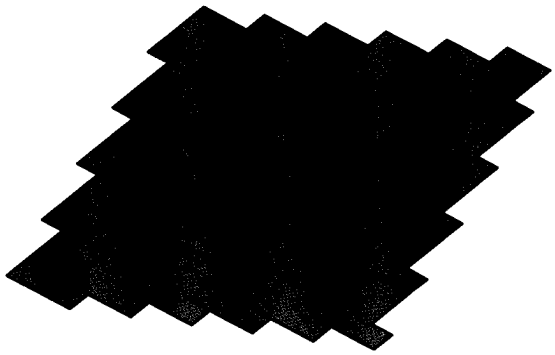
2. Identify the unit shape in each tessellation below.

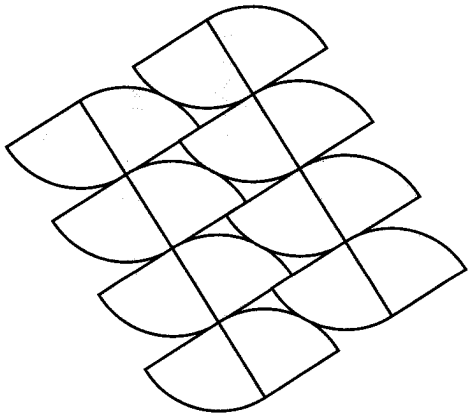


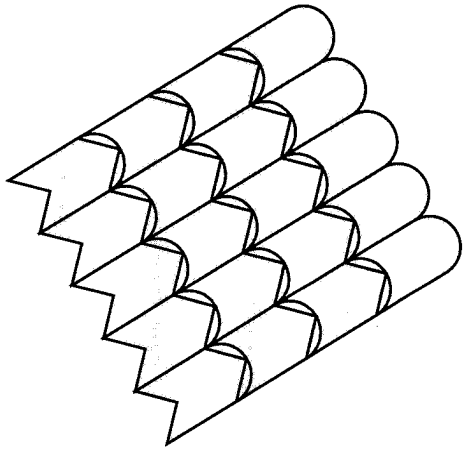


3. Which of the following are tessellations?

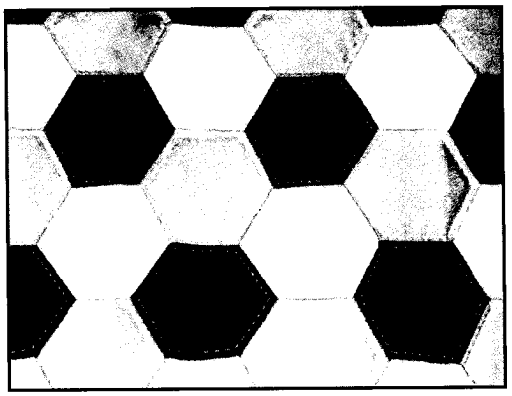


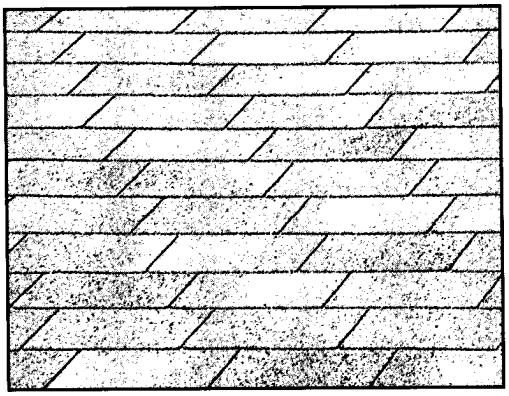


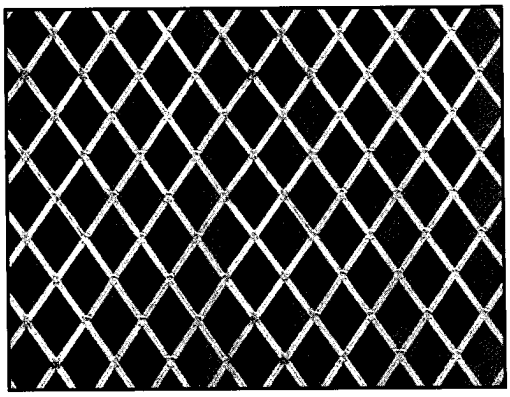


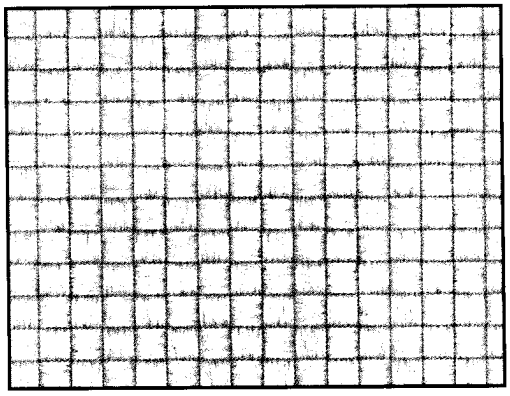


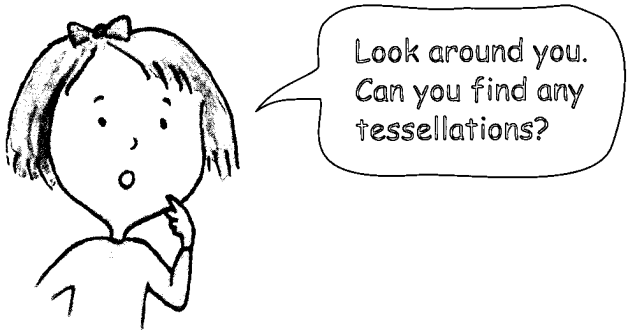
We can find tessellations in things around us.





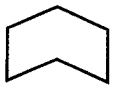




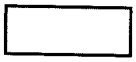


4. Which of the 3 shapes below can we use to make tessellations?

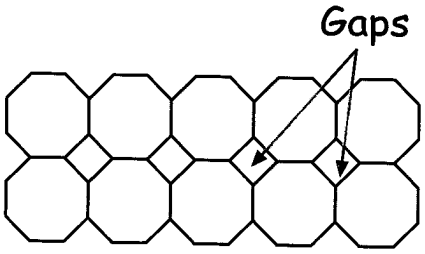
X



Y

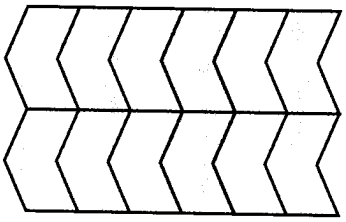


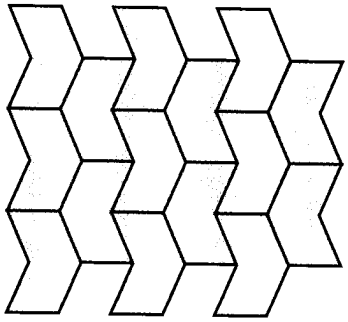
Z

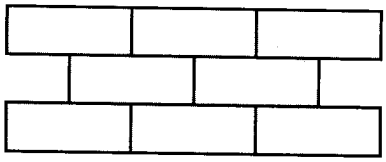


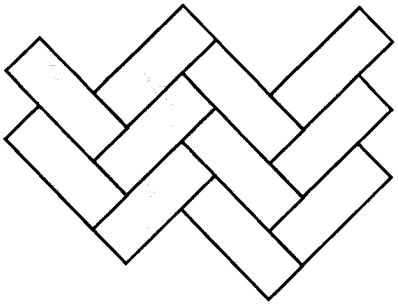
Shape X does not tessellate.

Shapes Y and Z tessellate in different ways.
We can make different tessellations using shapes Y and Z.



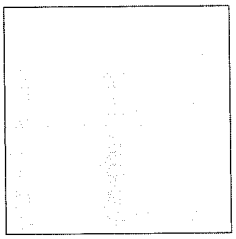


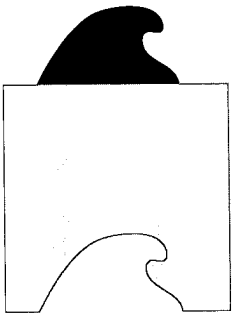




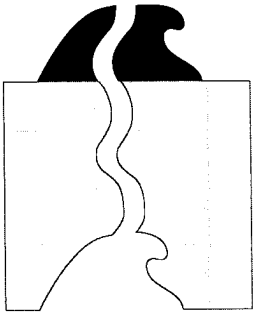
Can you think of other ways?

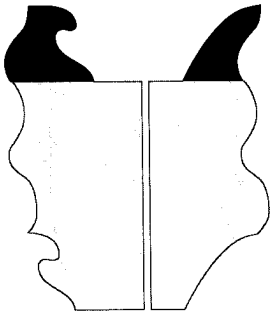
We can design figures using different shapes that tessellate.



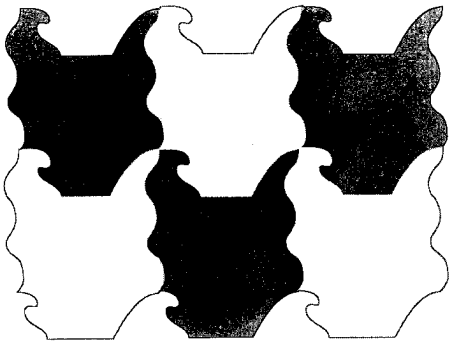


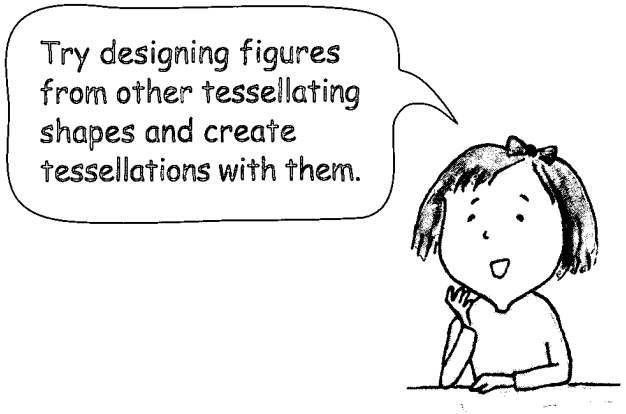
Start with a square. Cut a shape from one side of the square and tape it on the opposite side directly across from the cut-out.





Cut the shape into two parts and then tape them opposite each other as shown. This is your tessellating shape!

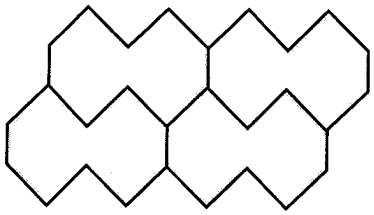




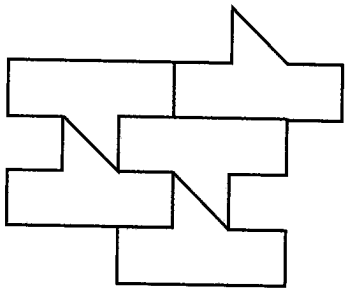
Let's Try ... Recognising Tessellations

1. Identify the unit shape in each tessellation.

(a)

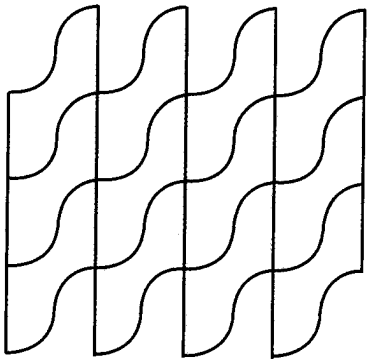


(b)

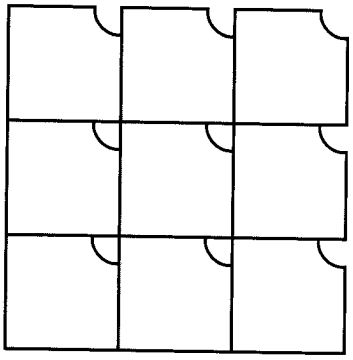


2. Which of the following are tessellations?

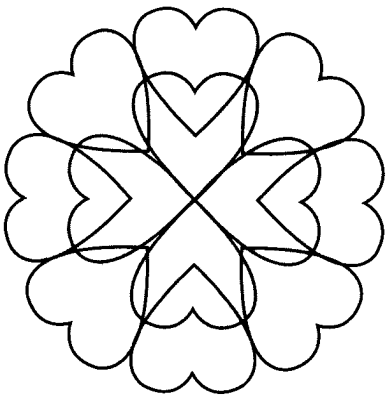
(a)



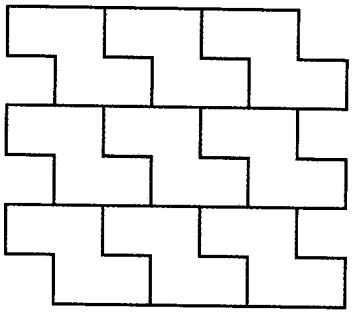
(b)



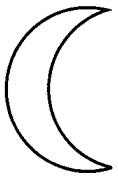
(c)

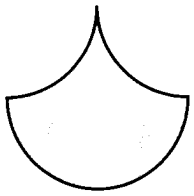


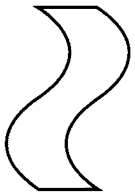
(d)

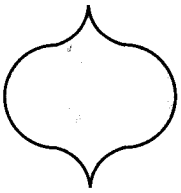


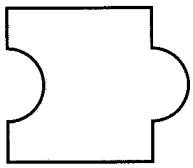
3. Make copies of the shapes and use them to find which shape(s) tessellate.

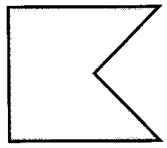
(a) 

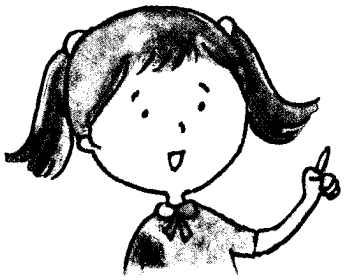
(b) 

(c) 

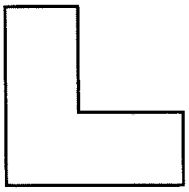
(d) 

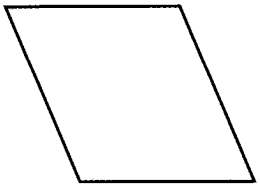
(e) 

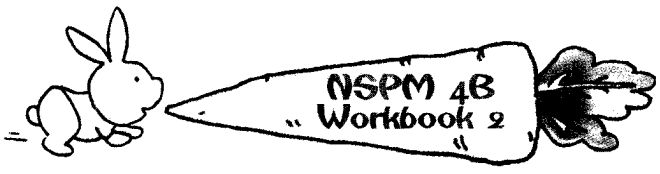
(f) 



4. Make copies of the shapes and show at least 2 different ways to tessellate them.

(a) 

(b) 

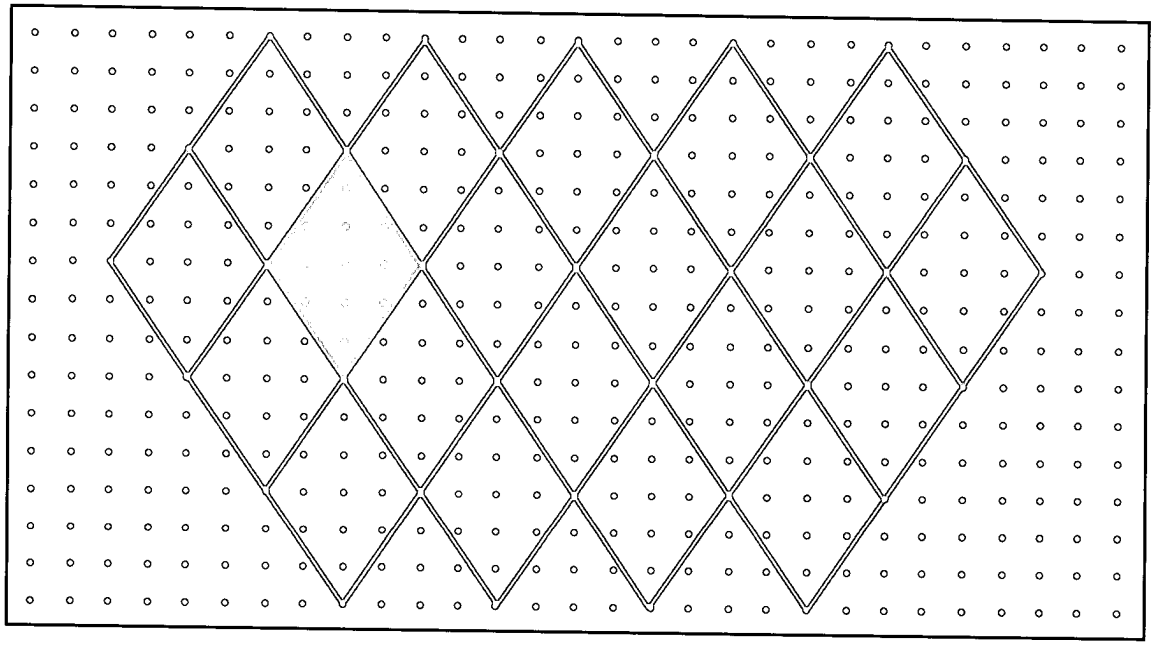


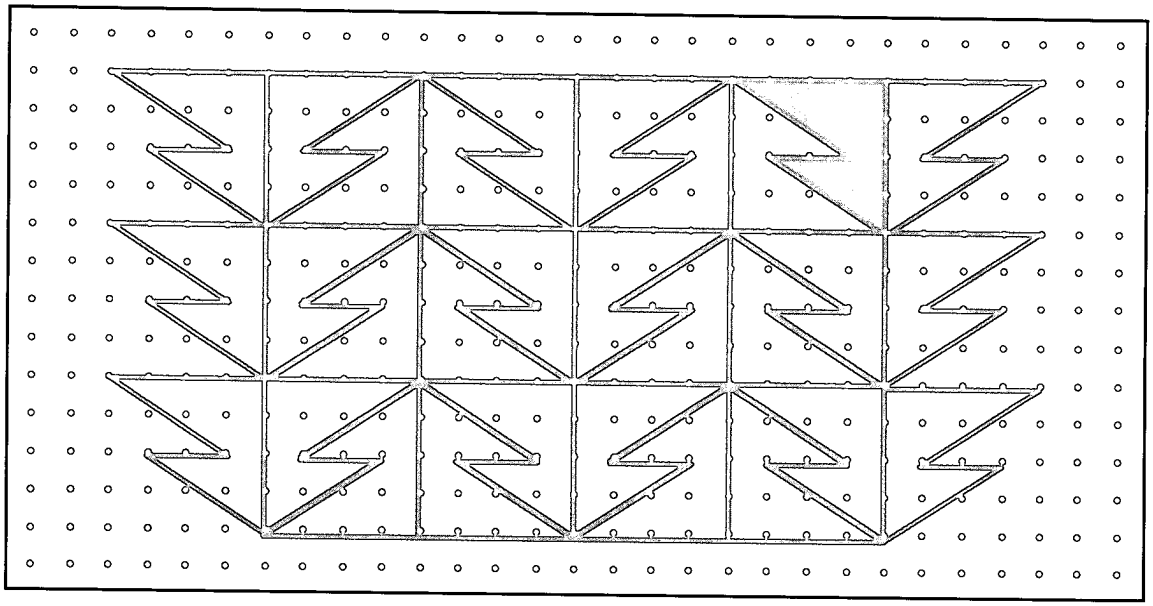
Worksheet 49

Let's Learn ... Drawing Tessellations

We can use dot grid paper to draw a tessellation.
It is much easier.

Look at the tessellation drawn on dot grid below.
The basic shape of the tessellation is shaded.



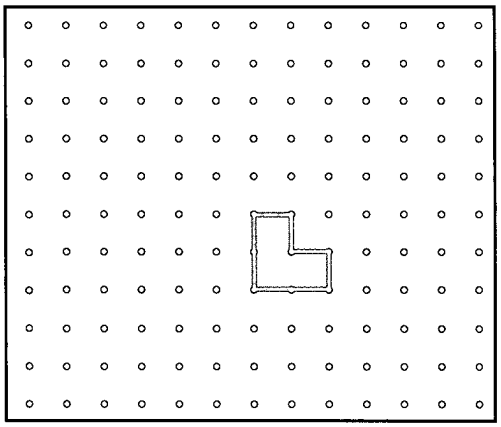


.•. Drawing Tessellations

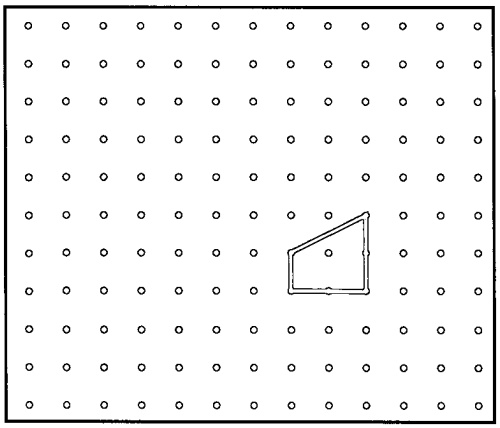
Copy each shape on dot grid paper.

Make as many different tessellations as you can using each of the following shapes.

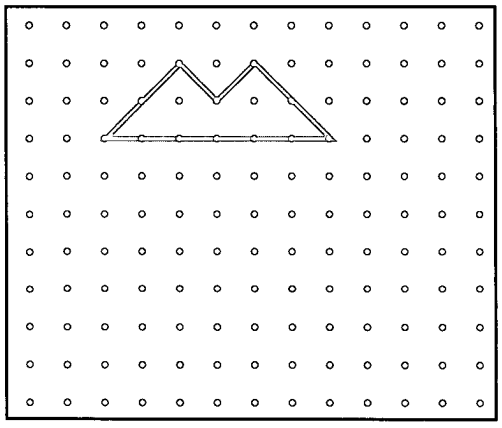
(a)



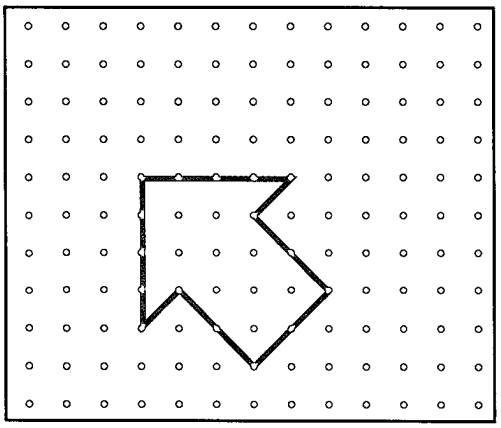
(b)

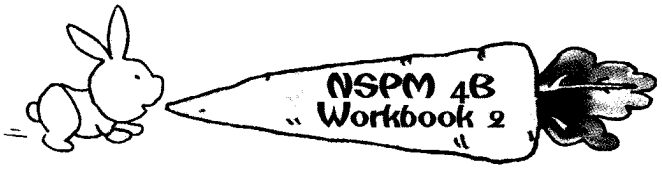


(c)



(d)





Worksheet 50
Practice 14

Create a tessellation using the computer.

Below are some examples of tessellations created using the computer.