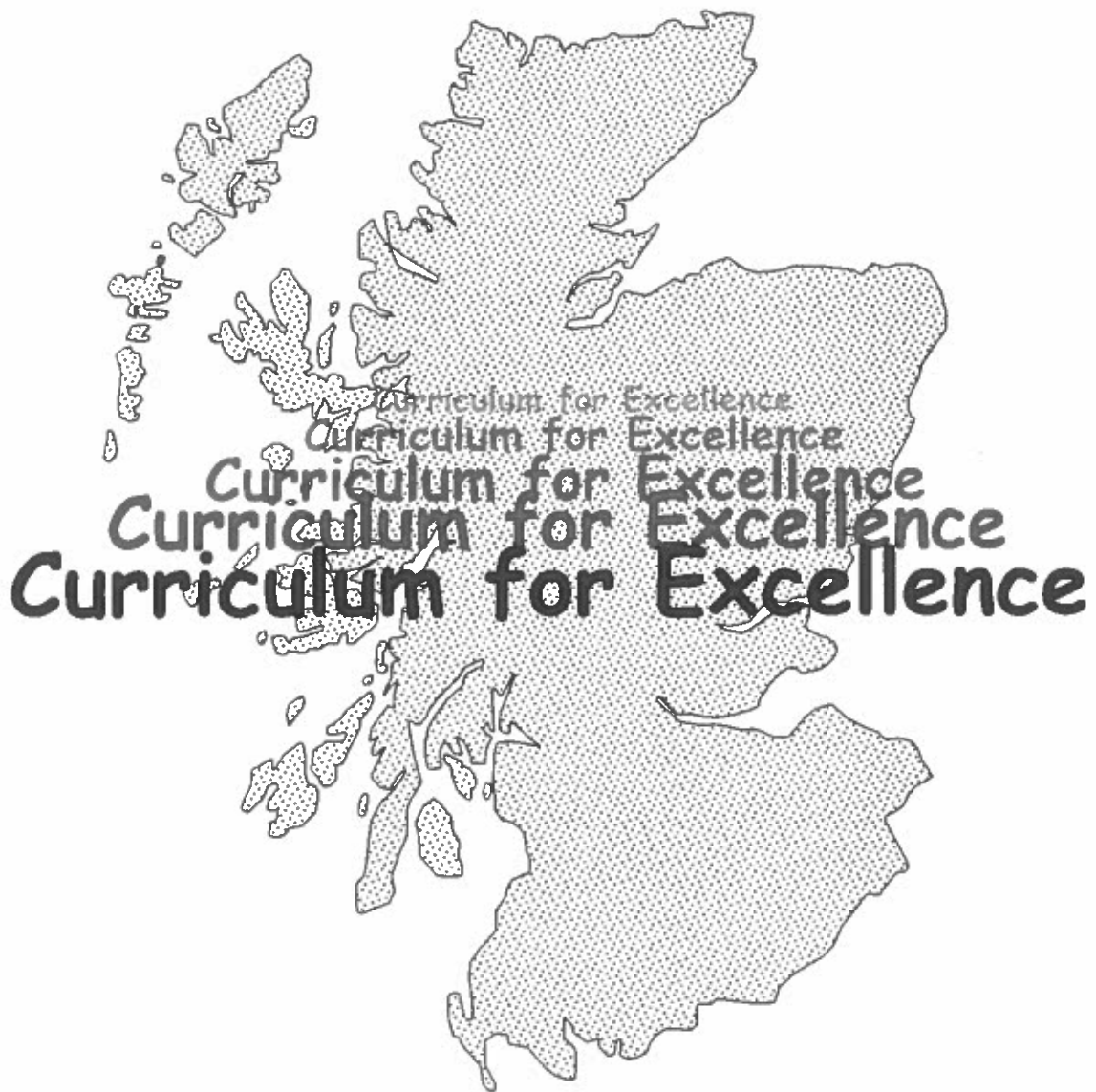




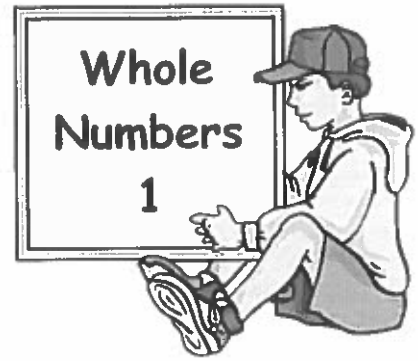
**TeeJay
Publishers**

Book 2a



Homework

CHAPTER 1



Exercise 1

1. What do the following digits stand for in the number 23986 :-

- a 8 b 3 c 9 d 2 ?

2. What does the 7 stand for in each of these numbers :-

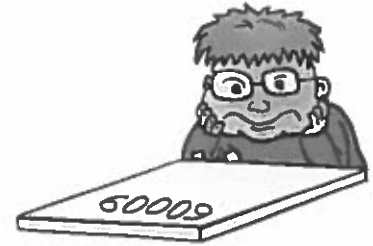
- a 6705 b 3971 c 7596 d 1837 ?

3. Write out the following numbers fully in words :-

- a 3960 b 35053 c 70406 d 90003.

4. Write the following numbers using digits :-

- a sixty thousand and nine
 b forty thousand four hundred and twenty seven
 c two hundred thousand and two.



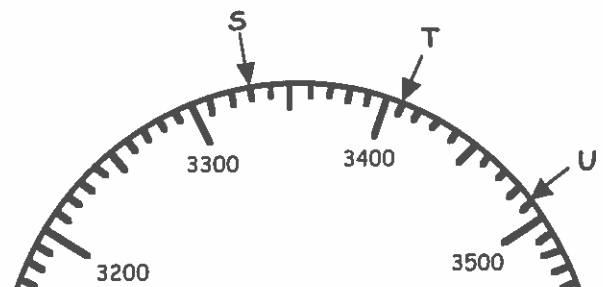
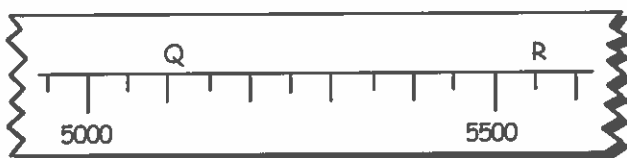
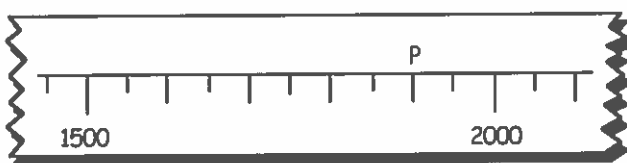
5. Put the following set of numbers in order, smallest first :-

5186, 5281, 5090, 5195, 5210, 5341, 5290, 5199.

6. Write down the number that is :-

- a 10 after 490 b 300 before 6570 c 3000 before 7200
 d 2500 after 6500 e 4000 before 9180 f 5800 before 9200.

7. Look at the following scales. What numbers are represented by P, Q, R, ... ?



8. What number lies halfway between :-

- a 650 and 660 b 8100 and 8500 c 7800 and 8200 ?

Exercise 2

1. Write down the answers to :-

- a $39 + 46$ b $75 + 65$ c $89 + 74$ d $370 + 290$
 e $630 + 880$ f $7500 + 5700$ g $8920 + 1080$ h $2967 + 6859$.

2. Write down the answers to :-

- a $73 - 42$ b $92 - 27$ c $100 - 56$ d $340 - 69$
 e $420 - 190$ f $810 - 380$ g $5500 - 4700$ h $10\ 000 - 3600$.

3. Find :-

- a $6560 + 1800$ b $7830 - 4950$ c $2638 + 6775$ d $8760 - 7980$.

4. Charles got an annual bonus of £859, but Carole's bonus was £1420.

- a How much did their bonuses come to **altogether** ?
 b How much **less** did Charles get than Carole ?



5.



Florence has a cheque for £2500.
 She intends to pay £1720 into her bank and use what's left to buy an HD Ready TV.

How much is the TV to cost ?

Exercise 3

1. Copy the following and find the answers :-

- | | | | |
|---|---|--|--|
| <p>a $\begin{array}{r} 396 \\ + 174 \\ \hline \end{array}$</p> | <p>b $\begin{array}{r} 798 \\ + 416 \\ \hline \end{array}$</p> | <p>c $\begin{array}{r} 727 \\ - 486 \\ \hline \end{array}$</p> | <p>d $\begin{array}{r} 812 \\ - 395 \\ \hline \end{array}$</p> |
| <p>e $\begin{array}{r} 4009 \\ + 5098 \\ \hline \end{array}$</p> | <p>f $\begin{array}{r} 8376 \\ - 5986 \\ \hline \end{array}$</p> | <p>g $\begin{array}{r} 6213 \\ - 798 \\ \hline \end{array}$</p> | <p>h $\begin{array}{r} 10\ 000 \\ - 6107 \\ \hline \end{array}$</p> |
| <p>i $3456 + 7777$</p> | <p>j $9000 - 285$</p> | <p>k $4902 + 2298$</p> | <p>l $10\ 000 - 8471$.</p> |

2. a Every Tuesday Ryanjet fly from Glasgow to Portugal, a distance of 2097 km and from there a further 6068 km to Dubai.

How far does the plane fly in total on a Tuesday ?



b



Sadiq the doorman earned £3470 in tips last year.
 This year his tips **dropped** by £590.

How much did he earn in tips this year ?

Exercise 4

1. Round to the nearest 10 :-

- | | | | |
|-------|-------|--------|-----------|
| a 72 | b 58 | c 6 | d 482 |
| e 307 | f 705 | g 4834 | h 14 299. |

2. Round to the nearest 100 :-

- | | | | |
|--------|----------|----------|-----------|
| a 473 | b 849 | c 3091 | d 7949 |
| e 7951 | f 38 270 | g 42 726 | h 81 999. |

3.



A motorbike is on sale at the local dealer's for £2364.

Round this amount to the nearest :-

- a £10 b £100.

4. The attendance figures at two Serie A Italian football matches last Sunday were 38 482 and 29 215.

Round both figures to the nearest :-

- a 10 b 100.



Exercise 5

1. Round each number to 1 figure accuracy, then, mentally, give an *estimate* to :-

- | | | | |
|---------------|---------------|----------------|------------------|
| a $19 + 51$ | b $73 - 48$ | c $81 - 18$ | d $385 + 549$ |
| e $608 - 275$ | f $780 - 567$ | g $2722 + 218$ | h $5533 - 847$. |

2. a Josie has 291 apples in his basket, Jenny has only 96.

Approximately, how many do they have in total ?



b Bobby paid £223 for a car service. Brian paid £377.

Approximately, what was the total for the two services ?



3. Give an approximate answer to each of the following :-

- | | | | |
|-------------|--------------|---------------|-----------------|
| a $77 - 26$ | b $518 - 98$ | c $915 - 452$ | d $784 - 249$. |
|-------------|--------------|---------------|-----------------|

4. Round each number to 1 figure accuracy, then give an *estimate* to :-

- | | | | |
|------------------|---------------------|--------------------|-----------------------|
| a $57 + 31 + 28$ | b $686 + 337 - 678$ | c $996 - 549 - 97$ | d $814 + 307 - 739$. |
|------------------|---------------------|--------------------|-----------------------|

5. a Of the 999 peppers delivered to a supermarket, 428 of them were green.

Approximately how many were not green ?



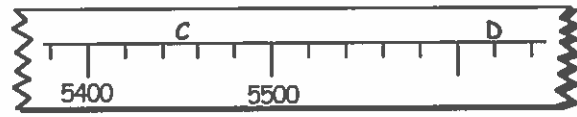
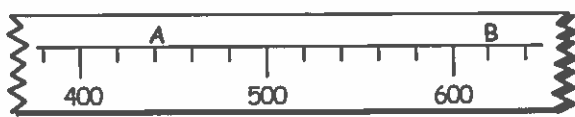
b What is $188 + 388 + 588 + 788$ approximately equal to ?

Revision Exercise

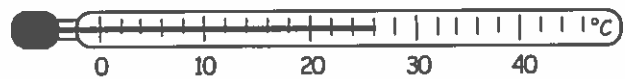


- Write out the number 76 408 fully in words.
- Write these numbers using digits :-
 - twenty three thousand four hundred and two
 - seventy nine thousand and seventeen.
- Rearrange the numbers given below in order, starting with the **smallest**.
57029 69080 69101 58792 70089 68090.

- What numbers are represented by A, B, C and D on the given scales ?



- What is the reading on this thermometer ?



- What number lies halfway between :-

a 3100 and 3500

b 37000 and 45000 ?

- Work out these :-

a $147 + 329$

b $2500 + 3900$

c $1700 - 970$

d $3000 - 72$.

- Set down the following and show your working :-

a
$$\begin{array}{r} 5271 \\ + 2984 \\ \hline \end{array}$$

b
$$\begin{array}{r} 6914 \\ - 1744 \\ \hline \end{array}$$

c $3987 + 886$

d $60000 - 9872$.

- Try this question **mentally** :-

A train leaves Glasgow with 110 passengers.

At Cardonald, 30 people get off and 5 people get on.

At Paisley, 25 people get off and 39 people get on.

How many passengers are on the train as it leaves Paisley ?



- Round to the nearest 10 :- a 56 b 483 c 4997.

- Round to the nearest 100 :- a 629 b 7851 c 38 361.

- Round to 1 figure accuracy and find an **approximate** answer for the following :-

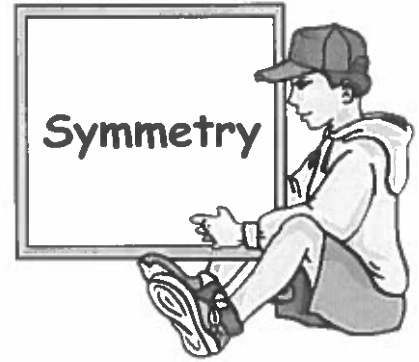
a $73 + 37$

b $812 - 394$

c $5967 + 2188$

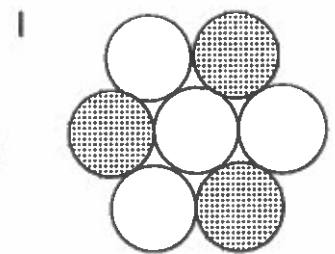
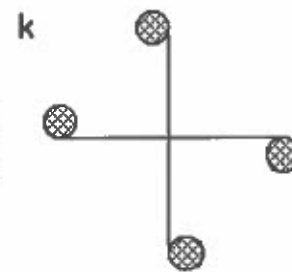
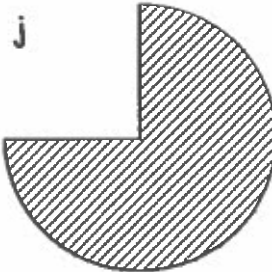
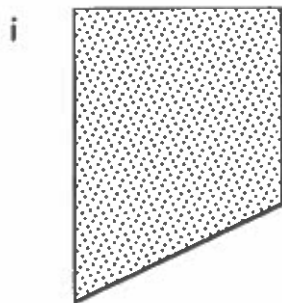
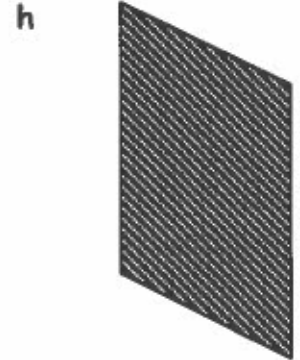
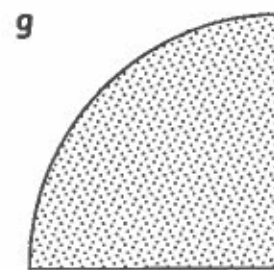
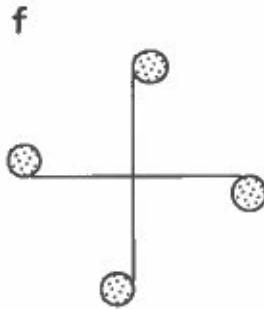
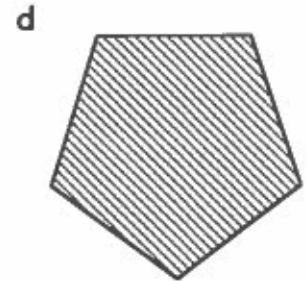
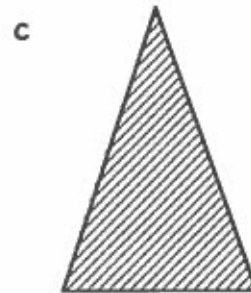
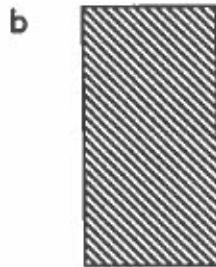
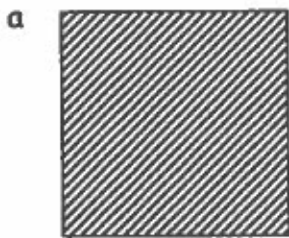
d $9304 - 1418$.

CHAPTER 2



Exercise 1

1. (i) Make a neat tracing of each of the following shapes and show all their lines of symmetry using dotted lines.
- (ii) Write down beside each shape how many lines of symmetry it has.



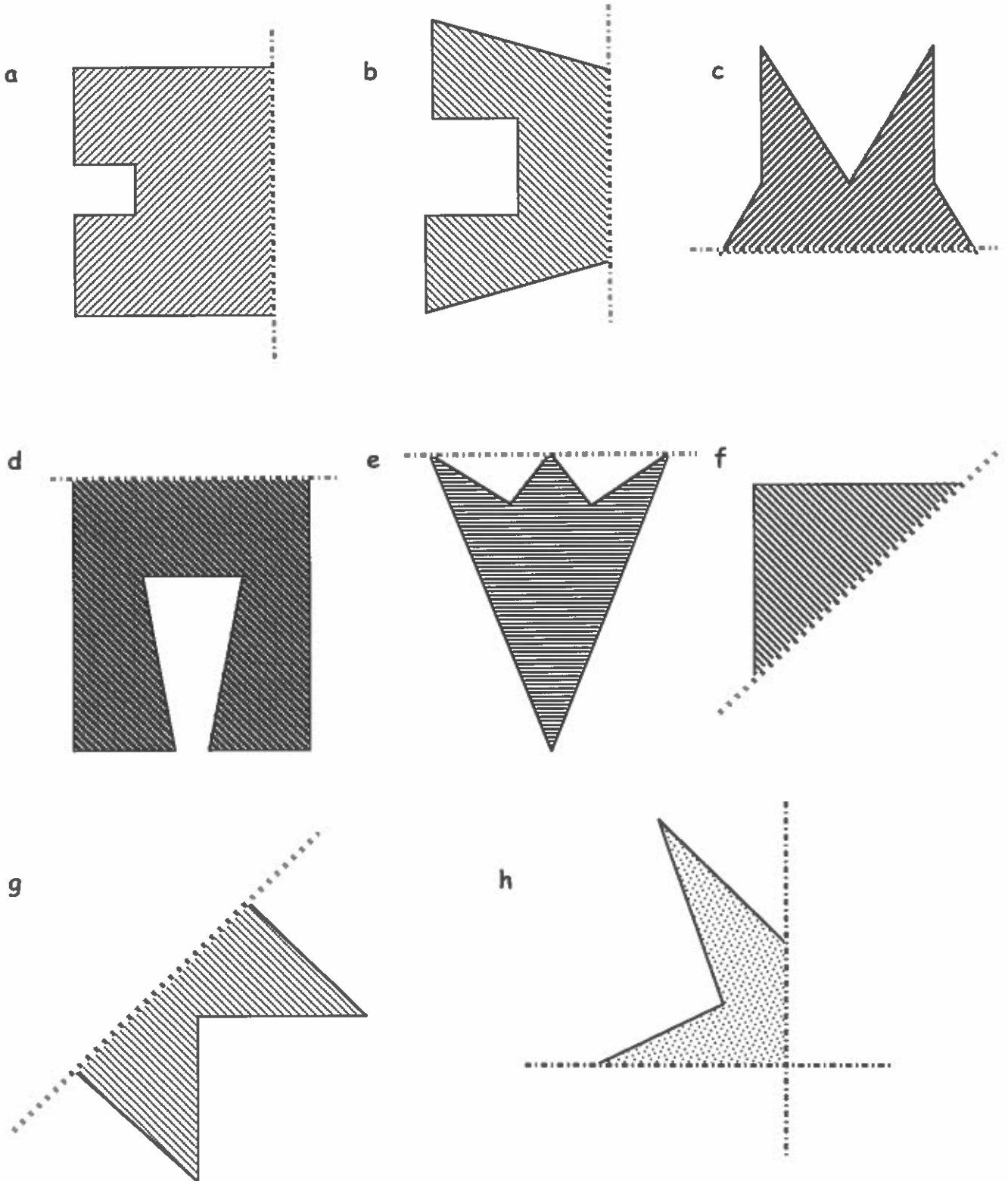
2. Draw and colour any shape neatly with :-

a 5 lines of symmetry

b 12 lines of symmetry.

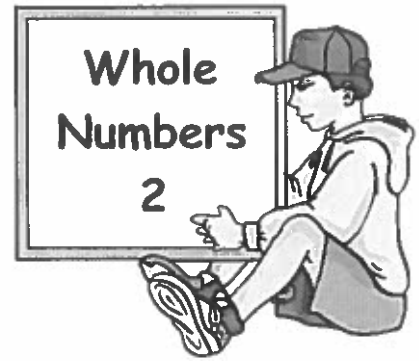
Exercise 2

1. Trace or copy each of the following shapes, then complete each shape so that the dotted line is a line of symmetry.



note :- 2 lines of symmetry

CHAPTER 3



Exercise 1

1. Copy the following and complete the calculations :-

a
$$\begin{array}{r} 238 \\ \times 3 \\ \hline \end{array}$$

b
$$\begin{array}{r} 97 \\ \times 4 \\ \hline \end{array}$$

c
$$\begin{array}{r} 496 \\ \times 5 \\ \hline \end{array}$$

d
$$\begin{array}{r} 185 \\ \times 6 \\ \hline \end{array}$$

e
$$\begin{array}{r} 1274 \\ \times 7 \\ \hline \end{array}$$

f
$$\begin{array}{r} 4521 \\ \times 8 \\ \hline \end{array}$$

g
$$\begin{array}{r} 2987 \\ \times 9 \\ \hline \end{array}$$

h
$$\begin{array}{r} 46208 \\ \times 7 \\ \hline \end{array}$$

2. Rewrite each of these in the above form and complete the calculations :-

a 54×8

b 189×7

c 6×107

d 95×5

e 8×1234

f 7×4260

g 16508×9

h 37529×4

3. Show your working in answering the following questions :-

- a Jemma pays £95 each month for her cable TV, phone and internet.
How much will she have paid after 9 months?



b



- Peter earns £24790 per year as a landscaper.
How much will he earn over 4 years?

4. a A palette holds 1085 jars of gherkins.
How many jars are there altogether on 7 palettes?



- b Find the value of :- (i) $4 \times 7 \times 75$ (ii) $8 \times 697 \times 5$.

Exercise 2

1. Copy the following and complete each calculation :-

a $7 \overline{)56}$

b $5 \overline{)715}$

c $6 \overline{)774}$

d $8 \overline{)632}$

e $6 \overline{)6582}$

f $4 \overline{)7428}$

g $7 \overline{)89922}$

h $9 \overline{)88047}$.

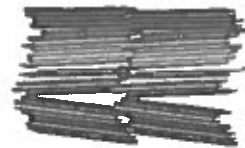
2. Set the following down in the same way as in Qu 1 and complete each calculation :-


- a $108 \div 6$ b $876 \div 2$ c $828 \div 3$ d $882 \div 9$
e $959 \div 7$ f $8165 \div 5$ g $9436 \div 4$ h $8538 \div 3$.

3. Find the remainder in these questions :-

- a $\overline{2} \overline{3187}$ b $\overline{3} \overline{9725}$ c $\overline{4} \overline{16v301}$ d $\overline{5} \overline{77084}$
e $919 \div 6$ f $4183 \div 7$ g $\frac{1938}{8}$ h $\frac{7516}{9}$.

4. 1080 coloured pencils are packed into 9 boxes.
How many pencils are in each box ?



5.  3147 limes are placed equally into 6 baskets.
How many are in each basket and how many are left over ?

6. Without using a calculator, find a way of dividing 1344 by 32 and state your answer.

Exercise 3

1. Write down the answers to the following :-

- a 19×10 b 73×10 c 99×10 d 10×123
e 10×906 f 4070×10 g 10×9762 h 10×76130 .

2. Write down the answers to the following :-

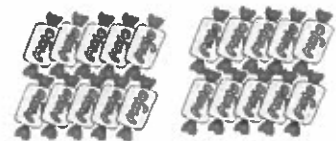
- a 37×100 b 98×100 c 100×186 d 100×800
e 3090×100 f 100×7001 g 100×5900 h 60400×100 .

3. Write down the answers to these :-

- a 19×1000 b 429×1000 c 490×1000 d 1000×530
e 1000×600 f 4680×1000 g 1000×4700 h 1000×62070 .

4. A box contains 100 Mojos. How many Mojos are there in :-

- a 25 boxes b 100 boxes c 420 boxes ?



5. There are 1000 metres in 1 kilometre. How many metres make up :-

- a 7 km b 41 km c 380 km d 6009 km ?

Exercise 4



1. Write down the answers to the following :-

- a $410 \div 10$ b $980 \div 10$ c $2450 \div 10$ d $7300 \div 10$
e $60\,400 \div 10$ f $127\,000 \div 10$ g $100\,000 \div 10$ h $4\,070\,500 \div 10$.

2. Write down the answers to these :-

- a $400 \div 100$ b $2700 \div 100$ c $8600 \div 100$ d $34\,000 \div 100$
e $7000 \div 100$ f $109\,000 \div 100$ g $70\,000 \div 100$ h $2\,900\,000 \div 100$.

3. Write down the answers to :-

- a $5000 \div 1000$ b $57\,000 \div 1000$ c $93\,000 \div 1000$ d $20\,000 \div 1000$
e $639\,000 \div 1000$ f $870\,000 \div 1000$ g $400\,000 \div 1000$ h $5\,100\,000 \div 1000$.

4. There are 100 pence in 1 pound. How many pounds are equal to :-

- a 1400p b 65 000p c 490 000p ?



5. A hive is built to take a maximum of 1000 bees. How many hives are need for :-

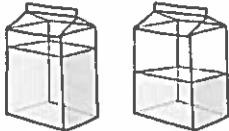
- a 17 000 bees b 38 000 bees c 250 000 bees d six million bees ?

Exercise 5



1. Calculate :-

- a $189 + 75$ b $518 + 427$ c $3795 + 1925$ d $7482 + 3828$
e $207 - 28$ f $454 - 289$ g $7507 - 2718$ h $9576 - 7885$
i 98×17 j 56×49 k 185×297 l 32×703
m $4655 \div 19$ n $7223 \div 31$ o $17\,304 \div 56$ p $510 \times 18 \div 12$.

2. a  One carton has 825 ml of liquid in it, the other has 489 ml.
What's the difference in volumes ?

b Bert paid £1856 to upgrade his conservatory windows and £1689 to renew the roof.

How much did this cost him in total ?



c



Cospo's have 15 vacuum cleaners for sale at £175 each.

If they sell them all, how much money will they have taken in ?

cont'd

- d This vending machine can hold 24 bars of chocolate.
How many machines can be filled from 1395 bars of chocolate and how many bars will be left over ?



Revision Exercise



1. Find :-

a
$$\begin{array}{r} 82 \\ \times 4 \\ \hline \end{array}$$

b
$$\begin{array}{r} 8257 \\ \times 8 \\ \hline \end{array}$$

c 607×9

d 6×4235 .

2. Copy the following and complete :-

a $7 \overline{)413}$

b $7185 \div 5$

c
$$\frac{7314}{6}$$

d $2574 \div 9$.

3. Do the following mentally :-

a 38×10

b 10×4270

c 501×100

d 100×700

e $6400 \div 10$

f $4000 \div 10$

g $85000 \div 100$

h $9000 \div 1000$.

4. Attempt these problems, showing all working :-

- a A ship carried 2276 passengers from Greenock to Barcelona. On the return journey there were 1948 passengers.
What was the total number of passengers on both trips ?

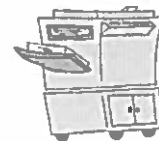


b



- A music shop orders in pianos at £2785 each.
How much did it cost for 6 pianos ?

- c This photocopier runs off 4285 copies over a five day week.
How many copies does that average out at per day ?



d



- When buying a new £9250 car, Jean accepted £3186 for her old one.
How much money did Jean have to pay the garage ?

5. Do the following :-

a $172 \times 7 \times 8$

b $2052 \div 9 \div 4$.

6. Put the correct sign (+, -, x, ÷) into these calculations to make them correct :-

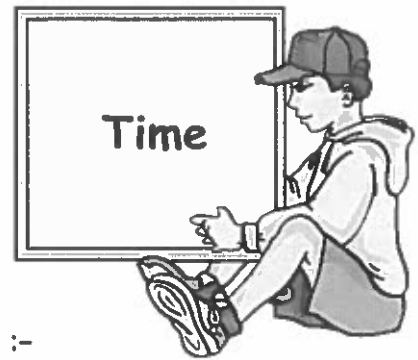
a $78 \dots 78 = 1$

b $65 \dots 65 = 130$

c $83 \dots 83 = 0$

d $19 \dots 19 = 361$.

CHAPTER 4



Exercise 1

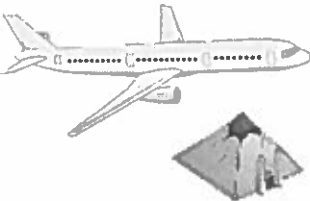
- Write down each of the following times using am and pm :-
 - half past seven in the evening
 - ten to nine at night
 - quarter to five in the afternoon
 - twenty five minutes after midnight
 - eleven minutes before midnight
 - twenty past six in the evening
 - two minutes past one in the morning
 - five minutes to ten at night
 - start of morning school interval
 - end of school lunch time.
- Laura left for the supermarket at ten to eleven in the morning and returned home at twenty five to three in the afternoon.
Write these times using am and pm.



Exercise 2

- Change the following 12 hour clock times to 24 hour clock times :-
 - 9.50 am
 - 7.00 pm
 - 4.15 pm
 - 8.55 am
 - 11.20 pm
 - 10.55 am
 - 10.58 pm
 - 3.02 am
 - 4.46 am
 - 5.18 pm
 - 11.01 pm
 - noon
- Change the following 24 hour clock times to 12 hour clock times (am and pm) :-
 - 0430
 - 1145
 - 1520
 - 1450
 - 0005
 - 1209
 - 1356
 - 1932
 - 1707
 - 0559
 - 2311
 - noon.
- On a Friday evening, this cinema opens at 8.55 pm and closes at 2.10 am on the Saturday.
Write both of these times in 24 hour form.



- 

Every Saturday at 2148, flight TOM895 leaves Sharm El Sheikh and arrives in Glasgow at 0351 on the Sunday.

 - Write these times in 12 hour form.
 - Find out where Sharm El Sheikh is.

Exercise 3

1. How long is it from :-

- | | |
|-----------------------|-----------------------------|
| a 4.05 pm to 9.05 pm | b 11.00 am to 1.30 pm |
| c midday to 7.30 pm | d 6.30 pm to 10.45 pm |
| e 8.55 am to 10.25 am | f 0720 to 1155 |
| g 1750 to 2115 | h 2155 to 0200 (next day) ? |

2.



Heather left on her holidays, deciding to go along the country roads. She set off at 10.45 am and arrived at her holiday hotel at 5 minutes to 5 the same day.

For how long had she been on the road ?

3. A tennis match began at 1135 and lasted for 1 hour 55 minutes.
When (24 hr time) did it finish ?



4. Shown is part of the rail timetable from Bilton to Kenbank.



	Bilton →	Lowton →	Sloan →	Henton →	Kenbank
Early Train	6.15 am	7.25 am	9.35 am	10.20 am	1.05 pm
Late Train	12.10 pm	1.20 pm			7.00 pm

- a How long does the early train take to travel from :-
 (i) Bilton to Lowton (ii) Sloan to Henton (iii) Bilton to Kenbank ?
- b Assuming that the late train travels at the same speed as the early train, when would it be expected to arrive at :-
 (i) Sloan (ii) Henton ?

5. Two sisters challenged each other as to who could do their Christmas shopping in the shortest possible time.
 Doris started her shopping at 0935 and finished at 1105.
 Eleanor was out shopping from 1440 until 1615.
 Who was quicker and by how much ?



Exercise 4

Here is part of a train timetable.

Lomond	1020	1210	1425	1705	2110
Whiteinch	1053	1243	1458	—	2143
Coatbridge	1124	—	1529	—	2218
Livingston	1142	1332	1547	—	2300
Musselburgh	1219	1359	1614	1820	2331

- At what time does the train leaving from Lomond at 1425 arrive in Musselburgh ?
- At what time does the 1210 Lomond train arrive in Livingston ?
- How long does the 1142 Livingston train take to reach Musselburgh ?
- Jenny arrives in Coatbridge station at quarter past three. How long does she have to wait for a train to Musselburgh ?
- If Jenny takes that train, at what time will she reach Musselburgh ?
- It takes Billy 20 minutes to walk from his aunt's house in Whiteinch to the station.



If he wants to catch the 1053 to go home to Livingston, what is the latest time he can leave his aunt's ?

Exercise 5

- What is the 3rd month of the year ?
 - What is the tenth month of the year ?
 - Which month comes just before August ?
 - Which month comes just after September ?
- How many days are there in the month of :-
 - February
 - August
 - November
 - December ?
- Write each of these dates using 6 digits :- e.g. 03/01/14 is 3rd January 2014.
 - 5th April 2013
 - 17th June 2014
 - 30th November 2020.
- Including both dates, how many days are there from :-
 - 5th of July till 23rd of July
 - 28th May till 9th of June
 - 20/09/15 till 10/10/15
 - 1/07/14 till 1/09/14 ?



Exercise 6

1. Change each of these to **minutes and seconds** :-

- | | | |
|------------|-------------|----------------|
| a 70 secs | b 150 secs | c 200 secs |
| d 300 secs | e 1210 secs | f 12 005 secs. |

2. Change each of these to **hours and minutes** :-

- | | | |
|------------|-------------|--------------|
| a 90 mins | b 130 mins | c 265 mins |
| d 420 mins | e 1830 mins | f 3000 mins. |

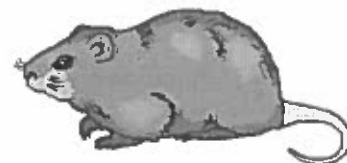
3. Copy the following and complete :-

- | | | |
|---|--|---|
| a $\begin{array}{r} 3 \text{ mins } 10 \text{ secs} \\ + 5 \text{ mins } 25 \text{ secs} \\ \hline \end{array}$ | b $\begin{array}{r} 6 \text{ mins } 40 \text{ secs} \\ + 1 \text{ min } 40 \text{ secs} \\ \hline \end{array}$ | c $\begin{array}{r} 7 \text{ mins } 35 \text{ secs} \\ + 3 \text{ mins } 55 \text{ secs} \\ \hline \end{array}$ |
| d $\begin{array}{r} 7 \text{ mins } 50 \text{ secs} \\ - 2 \text{ mins } 35 \text{ secs} \\ \hline \end{array}$ | e $\begin{array}{r} 9 \text{ mins } 05 \text{ secs} \\ - 4 \text{ min } 50 \text{ secs} \\ \hline \end{array}$ | f $\begin{array}{r} 2 \text{ mins } 30 \text{ secs} \\ - 1 \text{ min } 40 \text{ secs} \\ \hline \end{array}$ |

4. Over the past 3 nights, Tracy made a note of how long her pet hamster spent on its exercise wheel.

How long was that altogether ?

3 mins 35 secs,
2 mins 55 secs,
4 mins 25 secs.



Revision Exercise

1. Change these times to **24 hour format** :-

- | | | | |
|-----------|-----------|-----------|-----------------------|
| a 6.45 am | b 7.05 pm | c 9.32 pm | d half past midnight. |
|-----------|-----------|-----------|-----------------------|



2. Write the following in **12 hour format** :- (remember to use **am** or **pm**)

- | | | | |
|--------|--------|--------|---------|
| a 0735 | b 1740 | c 1051 | d 2253. |
|--------|--------|--------|---------|

3. Teejay's van set off at 0735 to make a delivery in Inverness.

If the driver got back at 1315 how long had he been away for ?



4.



A paper boy started his deliveries at 25 to 8 in the morning.
It took him 55 minutes to complete his round.

At what time did he finish ?

5. Amy spends two days a week taking elderly people for their messages in her bus. The pick-up times for both days are shown in the table.

	Home	Mrs Peters	Mr Davis	Miss Dykes	Mr/Mrs Speirs	Miss Ramage	Shop
Monday	0950	1000	1012	1025	1032	1057	1115
Thursday	1315	1325	1337				

- a How long does it take Amy to go from her house to Mr Davis' ?
 b How long does Miss Dykes spend on the bus ?
 c Assuming both trips take the same time, at what time does the afternoon trip reach the shops ?



6. a How many days are there in :- (i) November (ii) May ?
 b Including both dates, how many days from 23rd of September to 6th of October ?

7. Charity ran a race in 7 minutes and 12 seconds.
 Megan ran it in 6 minutes and 47 seconds.

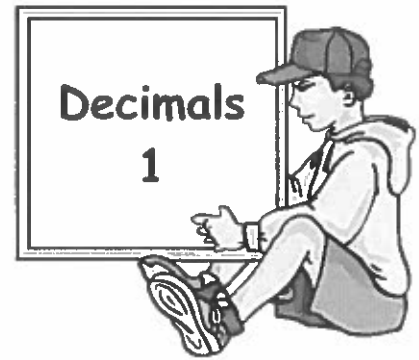
- a Who won and by how many seconds ?
 b What was their combined time ?



8. Egyptian time is 1 hour ahead of British time.
 Lenny flew from Prestwick to Cairo at 2045 last Tuesday.
 If the flight took 5 hours 25 minutes, at what time (Cairo time) and on what day did he arrive at Cairo Airport ?

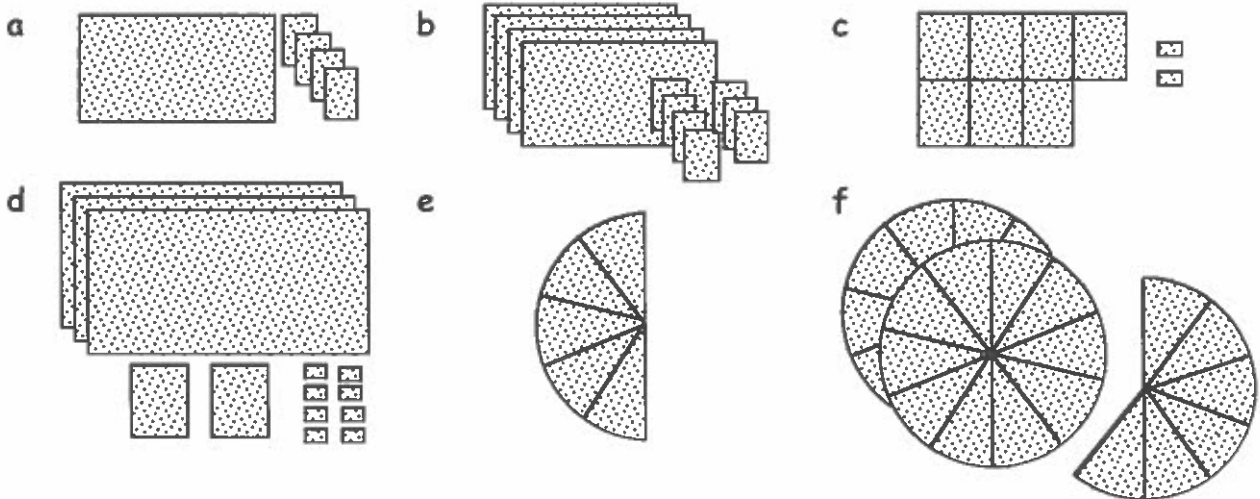


CHAPTER 5



Exercise 1

1. What decimal numbers do the following diagrams represent ?



2. Draw neat pictures, in the same style as shown above, to represent :-

- a 0.6 b 2.2 c 0.47 d 3.74.

3. What does the 4 represent in these numbers :-

- a 34.72 b 85.14 c 39.45 d 3.064 ?

4. Arrange the following numbers in order, **smallest** first :-

- a 0.82, 1.07, 0.09, 0.89, 0.02, 1.03.
b 0.165, 0.201, 0.107, 0.180, 0.166, 0.104, 0.156.

5. What number is :-

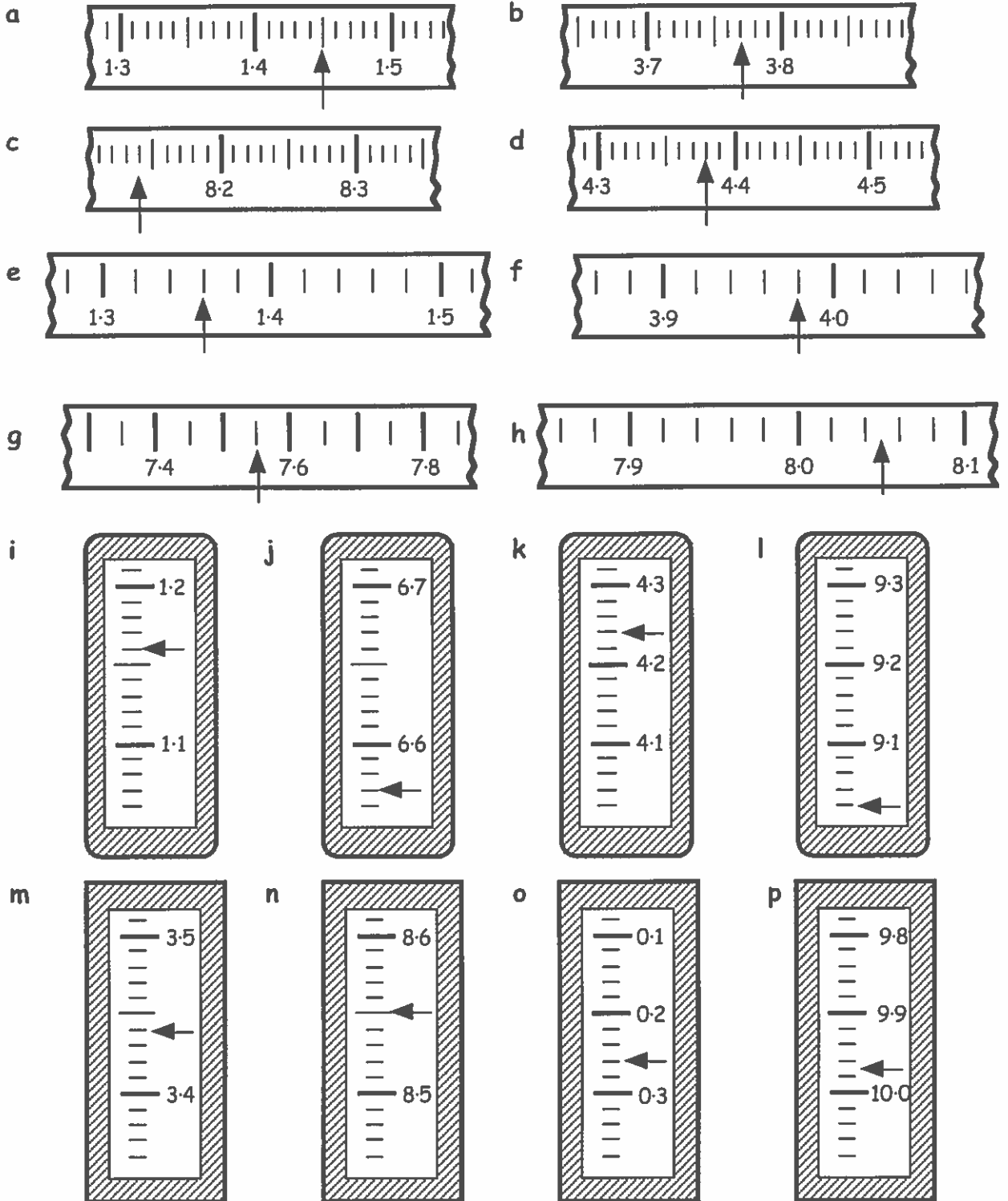
- a 0.6 up from 1.7 b $\frac{3}{10}$ down from 5.1 c $\frac{7}{100}$ up from 7.38
d $\frac{9}{100}$ down from 4.1 e $\frac{3}{1000}$ up from 2.407 f $\frac{7}{1000}$ down from 1.007 ?

6. What number lies halfway between :-

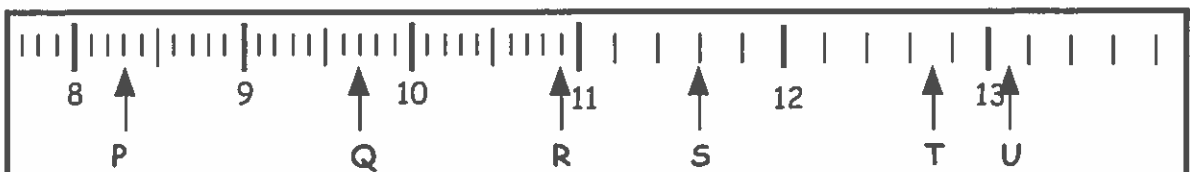
- a 0.2 and 0.8 b 3.6 and 3.7 c 6.3 and 6.6
d 0.18 and 0.2 e 2.001 and 2.005 f 1.1 and 1.06 ?

Exercise 2

1. Which decimal numbers are the arrows pointing to ?



2. Look at this scale and write what numbers the arrows P, Q, R are pointing to.



Exercise 3

- Round these to the nearest **whole £** :-
 - £8.30
 - £7.87
 - £1.49
 - £103.50.
- Round these measurements to the nearest **whole centimetre** :-
 - 7.6 cm
 - 5.75 cm
 - 23.48 cm
 - 107.50 cm.
- Round these numbers to the nearest **whole number** :-
 - 1.92533
 - 19.099988
 - 112.50765
 - 0.436.
- Use your calculator to do the following divisions.
Write down the answers, correct to the nearest **whole number** :-
 - $65 \div 7$
 - $1209 \div 73$
 - $153.7 \div 18.1$
 - $0.8 \div 0.9$.

e Seven neighbours shared 1000 plants. How many did they each get ?

f 112 pens are divided equally amongst five girls. How many pens each ?



Exercise 4

- Round these numbers to 1 decimal place :-
 - 7.26
 - 0.94
 - 21.75
 - 105.246
 - 4.0561
 - 29.05222
 - 1.963
 - 0.051.
- Use your calculator to do the following divisions, then write down your answers correct to 1 decimal place :-
 - $73 \div 15$
 - $800 \div 96$
 - $61.7 \div 0.82$.
 - $9.63 \div 10.2$.
- Use your calculator to change these fractions to decimals and round your answers to 1 decimal place :-
 - $\frac{5}{7}$
 - $\frac{7}{15}$
 - $\frac{13}{21}$
 - $\frac{15}{19}$.
- Round each number to 1 decimal place, (*no calculator*), then find an estimate to :-
 - $5.289 + 3.617$
 - $25.302 + 9.777$
 - $8.693 - 6.189$.
- A piece of rope, 19.3 metres long, is cut into 6 pieces of equal length. What length will each part be (to 1 decimal place) ?
 - 9 workers share a lotto win of £29 465. How much should each receive, to the nearest 10 pence (1 decimal place) ?



Exercise 5

1. Copy the following and find :-

a
$$\begin{array}{r} 3.7 \\ + 4.5 \\ \hline \end{array}$$

b
$$\begin{array}{r} 9.1 \\ - 2.6 \\ \hline \end{array}$$

c
$$\begin{array}{r} 8.49 \\ + 7.38 \\ \hline \end{array}$$

d
$$\begin{array}{r} 10.2 \\ - 8.3 \\ \hline \end{array}$$

e
$$\begin{array}{r} 5.23 \\ + 8.77 \\ \hline \end{array}$$

f
$$\begin{array}{r} 23.12 \\ - 17.51 \\ \hline \end{array}$$

g
$$\begin{array}{r} 23.57 \\ + 37.48 \\ \hline \end{array}$$

h
$$\begin{array}{r} 91.02 \\ - 19.05 \\ \hline \end{array}$$

2. Calculate :-

a $£7.26 + £8.44$

b $£9.72 - £6.89$

c $£64.93 + £36.66$

d $£22.50 - £2.56$

3. One weekend in January, 5.75 cm of snow fell in the Scottish Highlands.

On the same weekend, 13.14 cm of snow fell in the French Alps.

How much more snow fell in the Alps on that weekend?



4.



In a sale, a skirt cost £23.99 and a blouse cost £19.85.

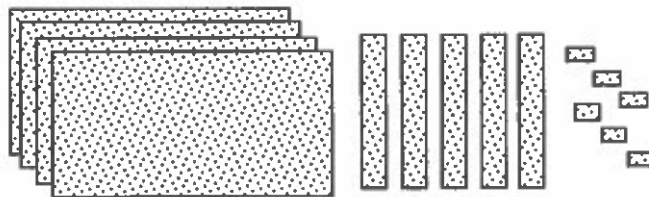
a What's the total cost for both items?

b How much dearer is the skirt than the blouse?

Revision Exercise



1. What decimal number is represented by this diagram?



2. In the decimal number 72.936, what does the :-

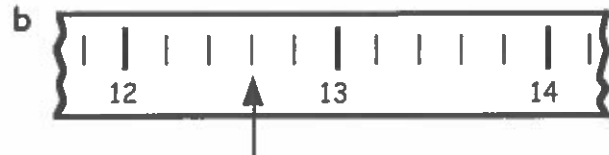
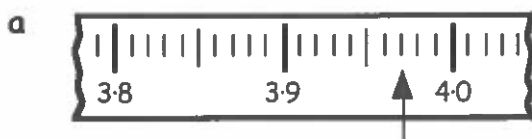
a 7 represent

b 3 represent

c 6 represent

d 9 represent?

3. What decimal numbers are the arrows pointing to?



4. Round the following to the nearest whole number :-

- a 8.4 b 12.8 c 62.79 d 102.635.

5. Round each of the following to one decimal place :-

- a 9.87 b 1.63 c 23.55 d 951.249.

6. Copy the following and find :-

- a $\begin{array}{r} 3.69 \\ + 1.76 \\ \hline \end{array}$ b $\begin{array}{r} 46.75 \\ + 9.27 \\ \hline \end{array}$ c $\begin{array}{r} 18.6 \\ - 17.9 \\ \hline \end{array}$ d $\begin{array}{r} 31.24 \\ - 23.83 \\ \hline \end{array}$

- e $£37.95 + £4.58$ f $£72.39 - £43.99$ g $£103.12 - £3.87$.

7. Sheena buys a lamp for £23.99 and 3 bulbs at £1.45 each.

How much change should she receive from £30 ?



8. Mrs Todd bought two trays of plants at £12.89 each and 5 boxes of slug pellets at £0.85 each.

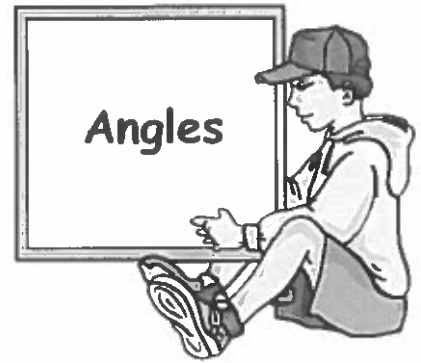


a How much did it cost her in total ? (*Show all your working*).

b She handed over a £20 note and six £2 coins.

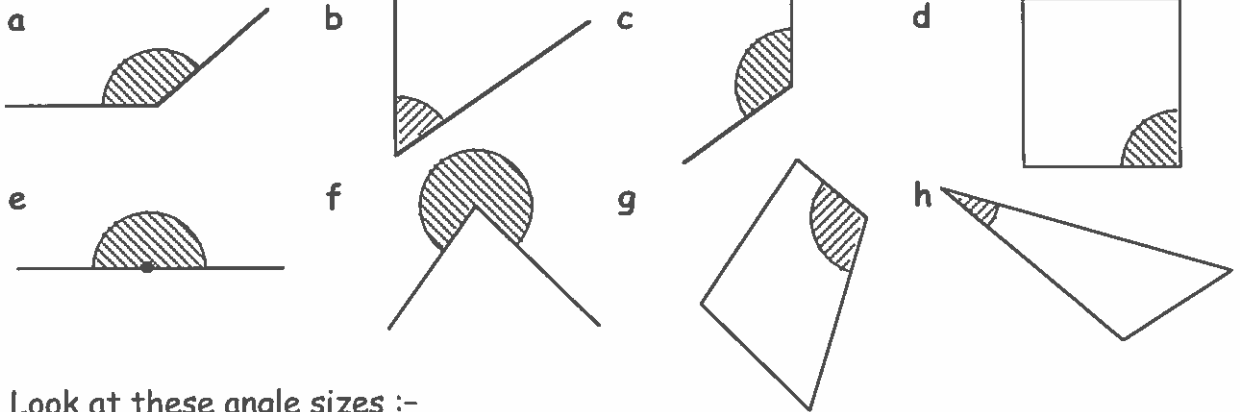
How much change did she get ?

CHAPTER 6



Exercise 1

1. Use a word from ACUTE, RIGHT, OBTUSE, STRAIGHT or REFLEX to describe each of the angles shaded below :-



2. Look at these angle sizes :-

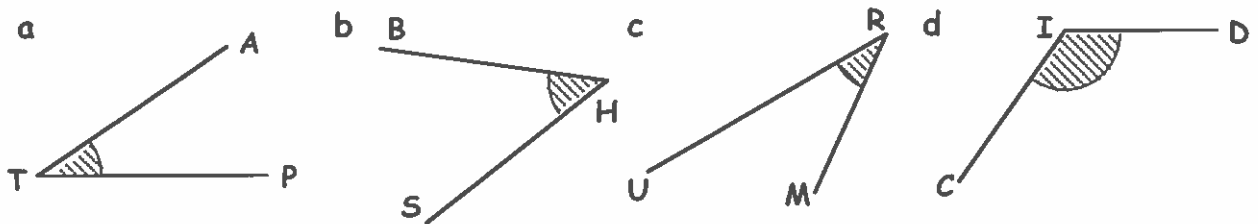
207°, 85°, 104°, 19°, 70°, 180°, 143°, 96°, 90°, 318°, 34°, 178°.

Which of the angles are :-

a acute b obtuse c straight d right e reflex?

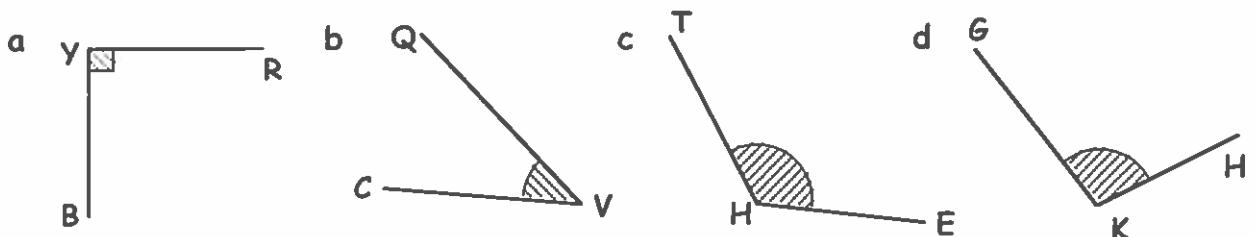
Exercise 2

1. Use 3 LETTERS each time to name the shaded angle :- (use the "∠" sign).



2. Use THREE letters to name each angle and say what TYPE of angle it is :-

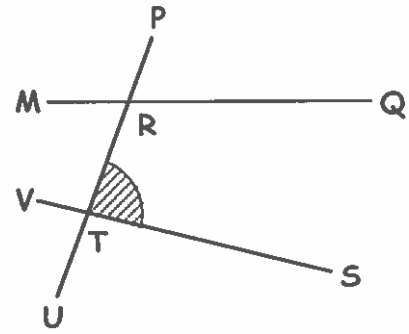
Example :- an ∠ABC is an acute angle.



3. Copy the diagram shown. $\angle RTS$ is shaded.

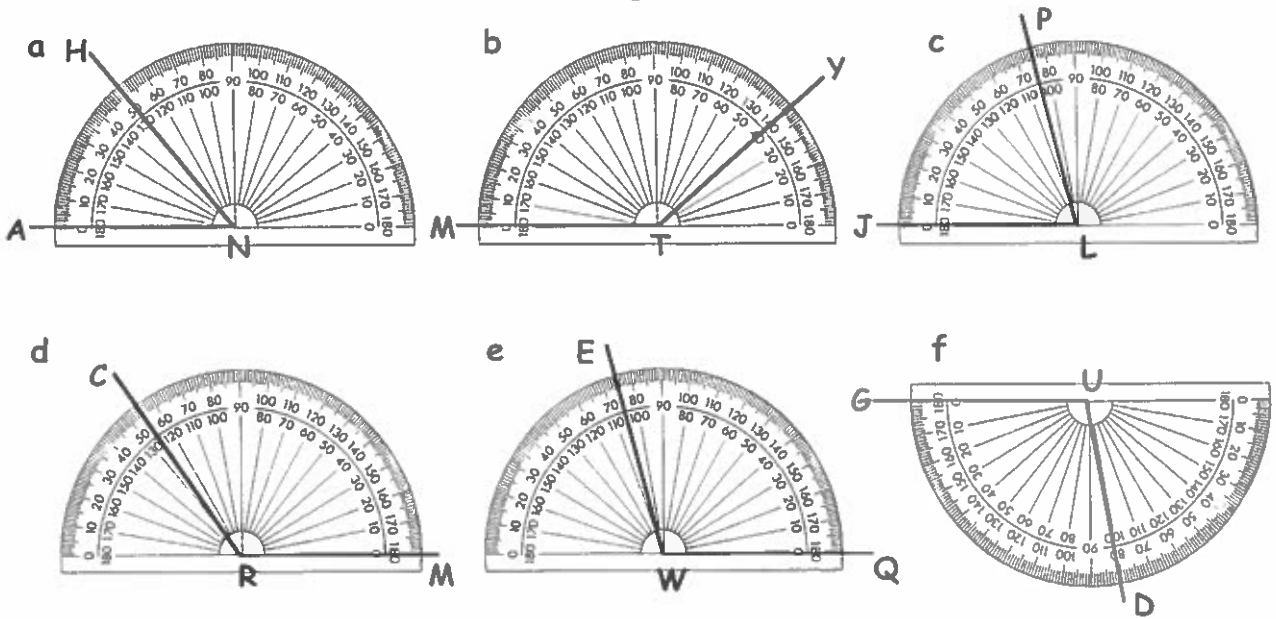
Mark in :-

- a $\angle VTU$ with an X.
- b $\angle MRP$ with an O.
- c $\angle PRQ$ and $\angle MRT$ with a *.

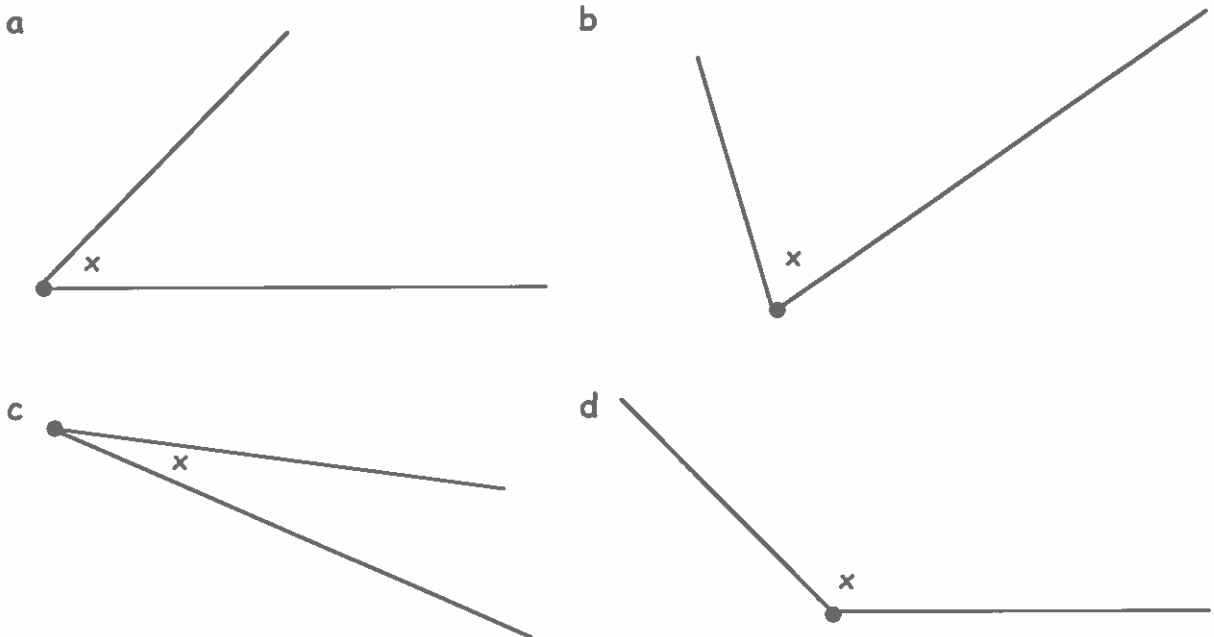


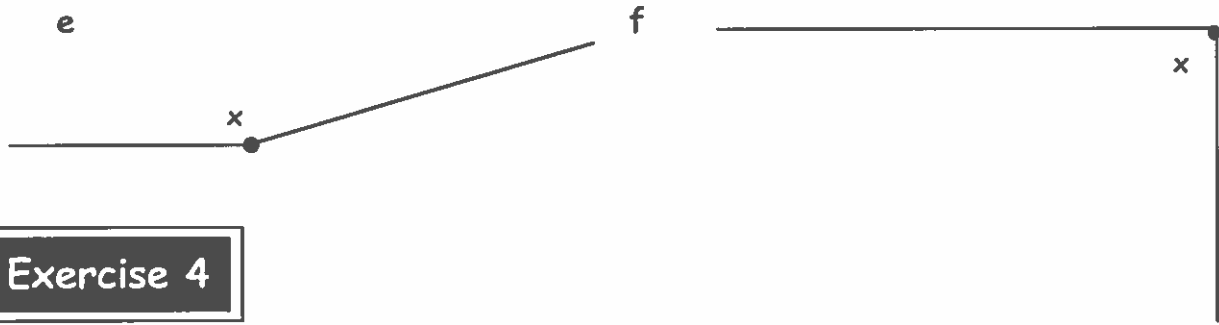
Exercise 3

1. Name and write down the size of each angle below. (example :- $\angle ABC = 70^\circ$)



2. Use a protractor to measure the size of these angles :-



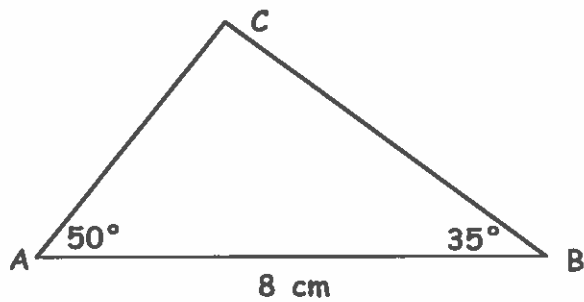


Exercise 4

1. Use a ruler and protractor to draw and label these angles :-

- | | | |
|----------------------------|----------------------------|----------------------------|
| a $\angle KAY = 30^\circ$ | b $\angle NWT = 90^\circ$ | c $\angle MUR = 75^\circ$ |
| d $\angle KIU = 120^\circ$ | e $\angle QSE = 165^\circ$ | f $\angle HYT = 9^\circ$ |
| g $\angle SIR = 153^\circ$ | h $\angle GRE = 94^\circ$ | i $\angle YOW = 270^\circ$ |

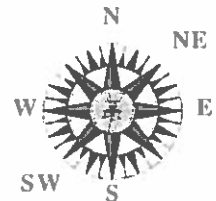
2. Make a full size accurate drawing of this triangle.



Exercise 5


1. How many degrees are there from :-

- | | |
|-----------------------------------|--|
| a North to West (clockwise) | b East to South (anti-clockwise) |
| c North to South West (clockwise) | d North to East (anti-clockwise) |
| e North East to West (clockwise) | f North to North East (anti-clockwise) ? |



2. A helicopter was flying South East and turned 90° clockwise. In which direction is the helicopter now flying ?



3.  Gerard was walking North West. He turned 90° clockwise and moved on a bit. Then he turned 225° anti-clockwise. In which direction did he end up facing ?

4. A cargo ship was heading South West. It made an anti-clockwise turn and headed East. How many degrees had the ship turned through ?



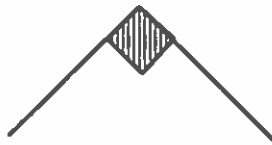
Revision Exercise

1. Use a word from "acute, right, obtuse, straight or reflex" to describe each type of angle below :-

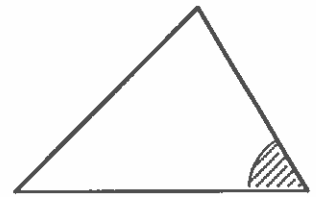
a



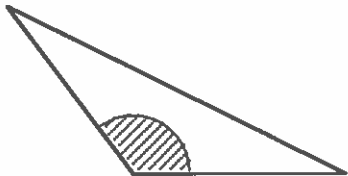
b



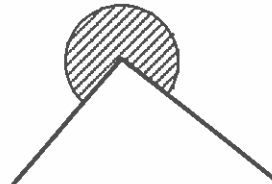
c



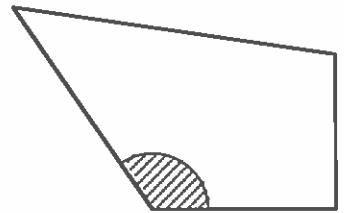
d



e



f



2. Look at the angle sizes given below :-

126° , 51° , 90° , 187° , 180° , 2° , 174° , 30° , 95° , 69° , 136° , 204° .

Make lists of angles which are :-

a acute

b obtuse

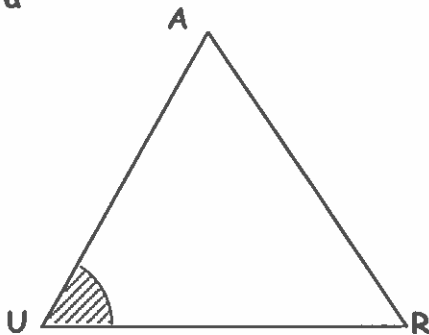
c right

d straight

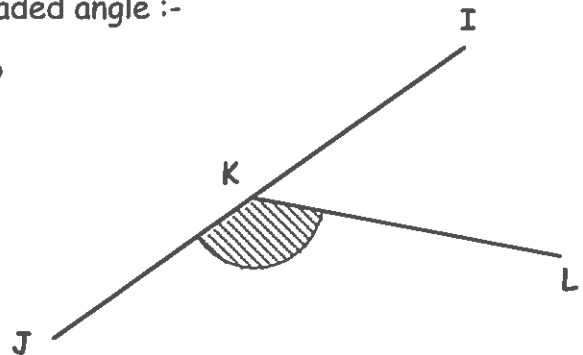
e reflex.

3. Use 3 letters and a " \angle " to name each shaded angle :-

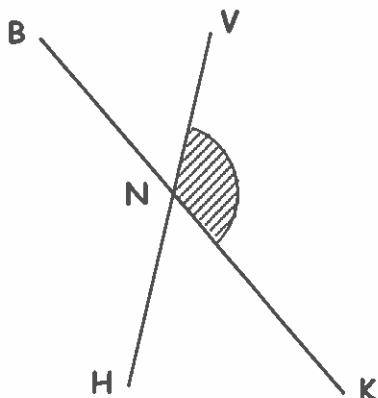
a



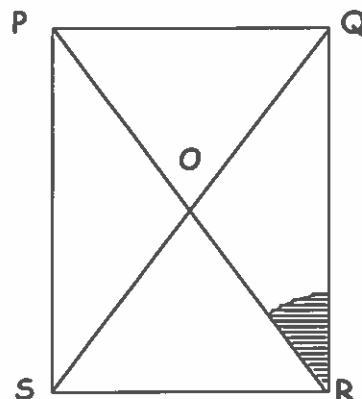
b



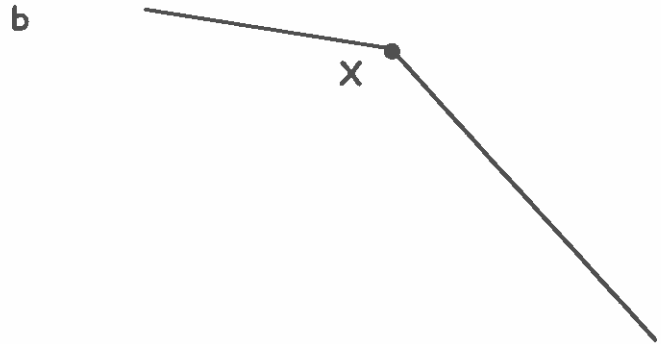
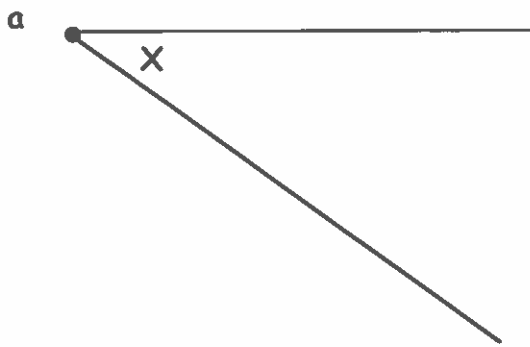
c



d



4. With a protractor, measure the size of these angles :-



5. Carefully draw each of the following angles and label them with their letters :-

a $\angle HIJ = 70^\circ$

b $\angle UPT = 10^\circ$

c $\angle PON = 135^\circ$

6. How many degrees are there from :-

a North to East (clockwise)

b South to West (anti-clockwise)

c South to North West (clockwise)

d East to North East (anti-clockwise).

7.



Thomas is driving his lorry in a North-Easterly direction.

He then makes a quarter turn anti-clockwise.

In which direction is he now driving ?

8. a A tall ship, sailing South West, turned 225° clockwise.

In which direction was the ship then sailing ?

b Later, the ship was sailing North East then turned clockwise and sailed West.

Through how many degrees had the ship turned ?



9.

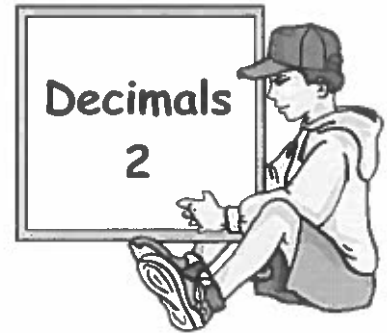


Brian was walking from his home up to the hills.

He was walking in a North Westerly direction.

In which direction must he walk from the hills to get back to his house ?

CHAPTER 7



Exercise 1



1. Write down the answers to the following :-

- a 5.7×10 b 4.25×10 c 10×8.36 d 10×17.84
e 0.87×10 f 10×0.03 g 10×1.234 h 0.0307×10 .

2. Write down the answers to :-

- a 5.67×100 b 1.65×100 c 100×7.04 d 100×9.5
e 4.613×100 f 100×0.864 g 100×0.0493 h 0.0027×100 .

3. Write down the answers to :-

- a 2.824×1000 b 3.090×1000 c 4.83×1000 d 1000×27.6
e 1000×0.975 f 0.0275×1000 g 1000×7.0707 h 1000×0.9001 .

4. A jar of strawberry jam weighs 0.345 kg. What is the weight of :-

- a 10 jars b 100 jars c 1000 jars ?



Exercise 2



1. Write down the answers to the following :-

- a $15.2 \div 10$ b $37.8 \div 10$ c $5.95 \div 10$ d $437.6 \div 10$
e $17.93 \div 10$ f $245.38 \div 10$ g $19.04 \div 10$ h $13 \div 10$.

2. Work out :-

- a $934.5 \div 100$ b $976.23 \div 100$ c $75.9 \div 100$ d $16.03 \div 100$
e $730 \div 100$ f $942 \div 100$ g $8.7 \div 100$ h $0.6 \div 100$.

3. Find :-

- a $8475.2 \div 1000$ b $39\,764.3 \div 1000$ c $9370 \div 1000$ d $836.1 \div 1000$
e $750 \div 1000$ f $300 \div 1000$ g $92.3 \div 1000$ h $14 \div 1000$.

4. a When 1000 paper clips were weighed, their total weight was 174 grams.
What was the weight of 1 paper clip ?



b 100 people formed a syndicate that got 4 numbers up in the Lotto.

If they received a total of £375, how much did each individual receive ?



Exercise 3



1. Copy the following and complete the calculations :-

a
$$\begin{array}{r} 2.68 \\ \times 4 \\ \hline \\ \hline \end{array}$$

b
$$\begin{array}{r} 8.97 \\ \times 2 \\ \hline \\ \hline \end{array}$$

c
$$\begin{array}{r} 18.3 \\ \times 5 \\ \hline \\ \hline \end{array}$$

d
$$\begin{array}{r} 45.93 \\ \times 7 \\ \hline \\ \hline \end{array}$$

e
$$\begin{array}{r} 40.87 \\ \times 8 \\ \hline \\ \hline \end{array}$$

f
$$\begin{array}{r} 160.76 \\ \times 9 \\ \hline \\ \hline \end{array}$$

g
$$\begin{array}{r} 465.7 \\ \times 3 \\ \hline \\ \hline \end{array}$$

h
$$\begin{array}{r} 334.79 \\ \times 6 \\ \hline \\ \hline \end{array}$$

2. Rewrite each of these in the above form and complete the calculations :-

a 9.8×6

b 17.6×8

c 7.64×4

d 18.76×9

3. A box of chocolates weighs 24.9 grams.

What is the weight of 5 boxes ? (show your working)



4.  Peter the plumber charges £32.69 per hour.

How much did he earn for working one day from 8.45 am till 3.45 pm ?

(show your working)

Exercise 4



1. Copy the following and complete the calculations :-

a
$$\begin{array}{r} 3 \overline{)16.47} \end{array}$$

b
$$\begin{array}{r} 2 \overline{)27.46} \end{array}$$

c
$$\begin{array}{r} 4 \overline{)50.76} \end{array}$$

d
$$\begin{array}{r} 5 \overline{)79.15} \end{array}$$

e
$$\begin{array}{r} 8 \overline{)0.56} \end{array}$$

f
$$\begin{array}{r} 6 \overline{)0.96} \end{array}$$

g
$$\begin{array}{r} 7 \overline{)111.58} \end{array}$$

h
$$\begin{array}{r} 9 \overline{)50.76} \end{array}$$

2. Rewrite each of these in the above form and complete the calculation :-

a $9.8 \div 2$

b $51.8 \div 7$

c $9.06 \div 3$

d $38.34 \div 6$

e $1.36 \div 4$

f $81.06 \div 6$

g $78.3 \div 9$

h $0.16 \div 8$

3. 6 packets of pastilles weigh 289.2 grams.

What is the weight of 1 packet ? (show your working)



4.  Winnie is paid £62.44 for working 7 hours as an hotel receptionist.

How much does she earn per hour ? (show your working)


5. What is one eighth of 3.936 ?

Exercise 5




1. I bought 9.5 square metres of carpet at £20.54 per square metre.
How much did it cost me altogether ?



2.  If three bottles, holding 1.725 litres, 0.95 litres and 2.039 litres of liquid lawn feed are poured into a watering can, how much liquid will there be **altogether** in the can ?


3. Brian has an annual salary of £20 236.80 and gets paid every month.
How much does he earn per month ?



4.  Mrs Henderson took her two sons Go-Karting.
It cost £12.50 for herself and £6.75 for each of her sons.
What was the **total** cost ?


5. Alison pays £255.87 for a 9 month's phone contract.
What does it cost her each month ?



6.  Paula hired a carpet cleaning machine from a DIY store.
It cost her a £9.75 deposit **plus** £3.99 per hour.
If she collected the machine at 0830 and returned it at 1630
how much did she have to pay **altogether** ?

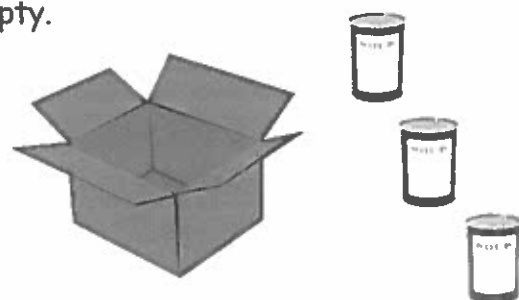
7. High Drive are offering a package of 8 driving lessons for £179.84.
Easy Pass are selling a package of 6 driving lessons for £135.06.
Which driving school is cheaper per lesson and by how much ?



8.  Doris buys five coffees each costing £2.99, four rounds of sandwiches at £1.95 each and three slices of apple pie at £2.48 per slice.

What change does she get from £35 ?

9. A cardboard box weighs 0.595 kg when empty.
Each tin of soup weighs 0.436 kg.
What is the total weight of a box containing 24 tins ?



Revision Exercise



1. Write down the answers to :-

- | | | | | | | | |
|---|----------------------|---|--------------------|---|--------------------|---|-------------------|
| a | 0.87×10 | b | 10×36.91 | c | 100×0.456 | d | 8.3×100 |
| e | 0.6004×1000 | f | 1000×1.99 | g | $34.8 \div 10$ | h | $0.37 \div 10$ |
| i | $760 \div 100$ | j | $9.87 \div 100$ | k | $5290 \div 1000$ | l | $58.2 \div 1000.$ |

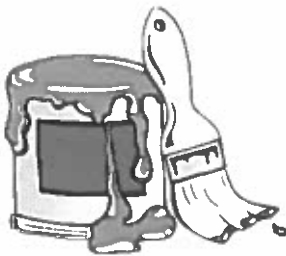
2. Set down and find :-

- | | | | | | | | |
|---|-----------------|---|-----------------|---|----------------|---|-----------------|
| a | 3.56×7 | b | 6×4.74 | c | $6.465 \div 5$ | d | $11.55 \div 3.$ |
|---|-----------------|---|-----------------|---|----------------|---|-----------------|

3. How much change from two £2 coins will I receive if I buy a bun at £1.29 and a can of lemonade at 89 pence ?



4.

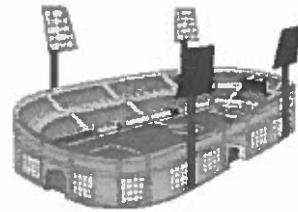


One tin of high gloss paint covers 7 square metres of a wall.

- How many tins will I need for a fence with an area of 59.5 square metres ?
- At £12.50 per tin, what will I have to pay ?

5. Mr Bennet bought four season tickets for the football at a total price of £1115.96.

What was the cost of 1 season ticket ?



You may use a calculator for the next 3 questions, but show all your working.

6.



This sack of potatoes weighs 8.925 kg.

A farm produces 85 sacks per day.

How many kg of potatoes is this ?

(Round your answer to 1 decimal place).



7. A rally car travelled 98.75 miles on 12.5 gallons of petrol.

How many miles to the gallon did the car get ?



8.

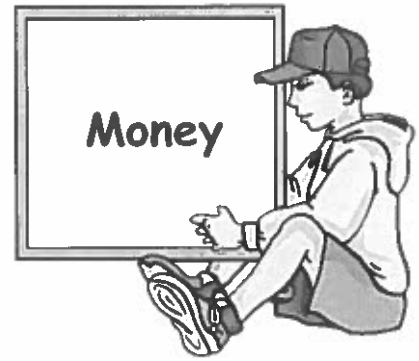


"Stickos" are selling boxes of 120 printer labels for £3.

"Label'em" are selling labels in rolls of 500 for £11.


Which printer label shop is cheaper per label and by how much ?

CHAPTER 8



Exercise 1

- How many £1 coins will you get for :-
 - four £5 notes
 - seven £5 notes
 - eight £10 notes
 - nine £10 notes
 - three £5 and five £10 notes
 - three £5, one £10 and five £20 notes ?
- How many £5 notes will you get for :-
 - two £10 notes
 - three £10 and one £20 note
 - six £10 and two £20 notes
 - eight £10 and one £20 note
 - seven £50 notes
 - five £10 and four £20 notes ?
- Using a mixture of notes and coins of your choice, list 5 different ways to pay for this camera.



£32.63
- Find out which countries use the following currency :-

a Krone	b Rupee	c Ruble	d Zloty.
---------	---------	---------	----------

Exercise 2

- Set down the following and find :-

a £ 4.78 + £12.36 -----	b £ 7.49 - £4.63 -----	c £ 16.25 + £9.99 -----	d £ 60.00 - 27.68 -----
----------------------------------	---------------------------------	----------------------------------	----------------------------------

e £9.16 + £3.58 f £8.58 - £6.29 g £28.79 + £4.30 h £18 - £12.99.
- Set down and complete each multiplication :-

a £4.76 x 2 -----	b £3.94 x 4 -----	c £8.87 x 6 -----	d £2.69 x 8 -----
----------------------------	----------------------------	----------------------------	----------------------------

e £4.57 x 3 f £4.75 x 5 g £2.89 x 7 h £3.26 x 9.

3. Set down and complete each division :-

a $2 \overline{) \pounds 1.40}$

b $4 \overline{) \pounds 6.52}$

c $6 \overline{) \pounds 5.40}$

d $8 \overline{) \pounds 19.04}$

e $\pounds 3.96 \div 3$

f $\pounds 12.85 \div 5$

g $\pounds 15.19 \div 7$

h $\pounds 4.23 \div 9$

4. Use the fact that $4 \times 7 = 28$ to work out :-

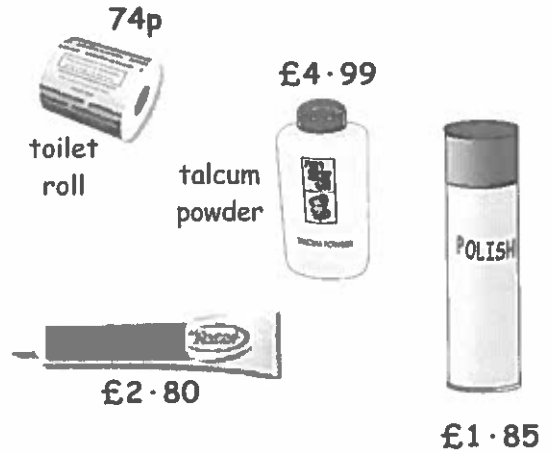
a $28 \times \pounds 2.65$

b $\pounds 46.76 \div 28$

Exercise 3

1. Calculate the total cost of :-

- a a tube of toothpaste and two toilet rolls.
- b a tin of polish and a tin of talc.
- c two tins of talc. and five toilet rolls.
- d one of each item.



2. Copy and complete the following bills.

Write what change is left from £25 in each case.

<p>a</p> <p>2 litre milk cartons at 95p/litre</p> <p>4 packs of Bagels at £1.79 per pack</p> <p>1/2 a cucumber at 68p for a whole one</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> <p>total</p> <p>_____</p> <p>_____</p> </div> </div>	<p>£</p>
---	----------

<p>b</p> <p>4 kg onions at £0.85 per kg</p> <p>3 kg leeks at £2.15 per kg</p> <p>1/2 kg celery at £2.48 per kg</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> <p>total</p> <p>_____</p> <p>_____</p> </div> </div>	<p>£</p>
--	----------

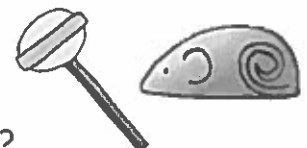
<p>c</p> <p>500 g of wire nails at £0.72/100 g</p> <p>700 g plasterboard nails at £0.61/100 g</p> <p>300 brass screws 9p each</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> <p>total</p> <p>_____</p> <p>_____</p> </div> </div>	<p>£</p>
---	----------

<p>d</p> <p>5 trays of marigolds at £2.80 per tray</p> <p>2 packs of grass seed at £3.75 per pack</p> <p>2 cactus plants at 82p each</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> <p>total</p> <p>_____</p> <p>_____</p> </div> </div>	<p>£</p>
--	----------

3. I bought 10 sweets, a mixture of lollies and sugar mice.

A lolly costs 15p and each sugar mouse costs 7p.

If the bill came to £1.18, how many of each must I have bought ?



Exercise 4



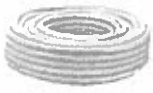
1. Mrs Barnaby needs 5 plums to bake a pie.

- How much will she save buying a pack of 5 rather than buying 5 individual plums ?
- If she had only needed 4 plums for the recipe, how much would she have saved by buying them individually ?

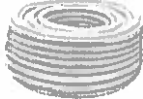


Plums
5 Pack - £1.20
or
26p each

2.



20 m hose
£12.25



32 m hose
£19.20

Homestore have garden hoses in two sizes.

- Which is the **better** buy per metre of hose ?
- Give a reason why you might buy the cheaper one.

3. Which is the best buy here ?

One of the tubs is on special offer. (explain)

£7.14



6 kg

£4.95



4.5 kg

£3.57



3 kg

Exercise 5

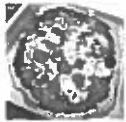


1. Debbie bought a coat, a skirt and a bag from Top Store and the bill came to £111.48.

If the skirt was £24.99 and the bag was £13.99, what was the cost of the coat ?



2.



Two pizzas and a can of diet cola cost me £21.39.

If a can of cola was priced at £1.65, what was the price of a pizza ?

3. Greggits the Bakers, sells mouth-watering brownies.

A box of 8 costs £8.96 and a pack of 6 costs £6.84.

Which is the **better deal** ? (Explain your answer with working).



4.



Harry bought a new fridge freezer by making a deposit of £38.90 followed by 6 monthly payments of £43.98.

How much did it cost him **altogether** for his fridge freezer ?

5. Four friends went for a meal. If the total bill had been shared equally amongst the 4 of them, each would have had to pay £36.84. Because it was Fred's retiral night, the other three decided to treat him and split the bill 3 ways.

How much did each person really have to pay ?



Revision Exercise



1. Gareth buys a printer costing £47.38.
He hands over two £20 notes and a £10 note.



- a How much change should Gareth get ?
b Give an example of what notes and coins he might have in his change.

2. Work out the answers to these :-

a $£15.78 + £6.98$ b $£49.06 - £18.09$ c $£6.27 \times 8$ d $£16.83 \div 9$.

3. Strawberry iced buns can be bought in boxes of 4 or boxes of 6.

The box of 4 costs £1.52 and the box of 6 costs £2.16.



Which is the **better** buy ?

(Explain your answer with working).

- 4.



This washing powder comes in 2 sizes.

The 500 gram packet sells at £2.60.

The 700 gram packet sells at £3.57.

Explain which of the two is the **better** buy.

You may use a calculator in the next two questions but must show your working.

5. The total cost for a group of 6 adults to go to the cinema was £59.04.

- a What was the cost for each person ?
b Mrs Bradley paid for herself, her mum and her 2 uncles.

How much did Mrs Bradley have to pay ?



- 6.

SPECIAL OFFER
on ALL NOVELS
BUY 5 - PAY FOR ONLY 4 !!



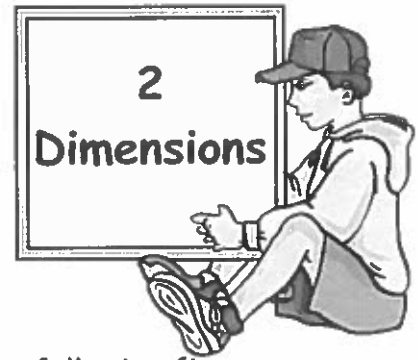
Mrs Allison ordered 40 novels for her class, paying the normal price, £4.50 each.

- a How much should the books cost ?

She then receives a flier from the book company, pointing out their special offer for that month.

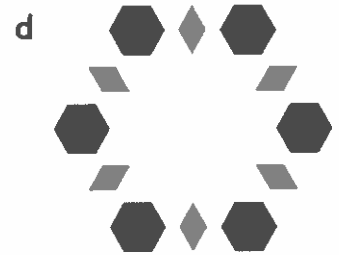
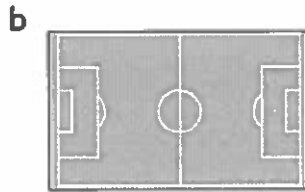
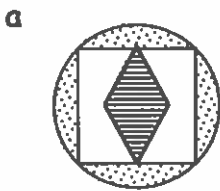
- b How much would it save her if she were to change to the special offer ?

CHAPTER 9

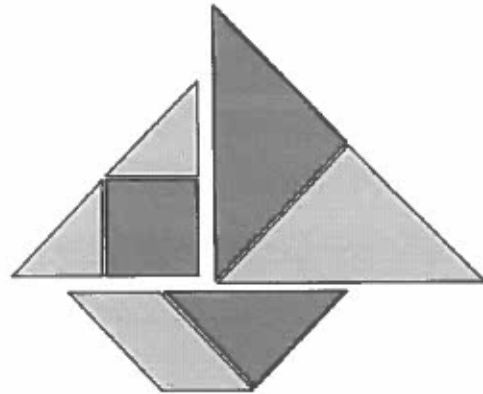


Exercise 1

1. Identify the (2 Dimensional) mathematical shapes in the following figures :-



2. Name the shapes in the tangram and state how many of each there are.



3. How many sides has a :-

- | | |
|-----------|--------------|
| a hexagon | b octagon |
| c decagon | d dodecagon? |

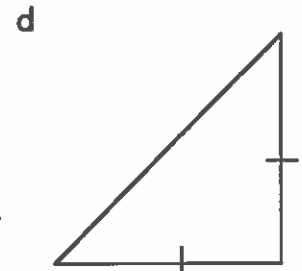
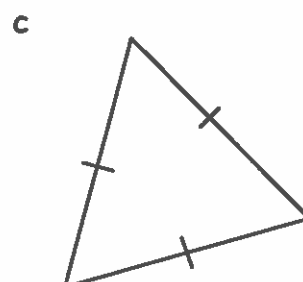
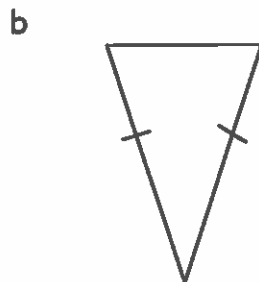
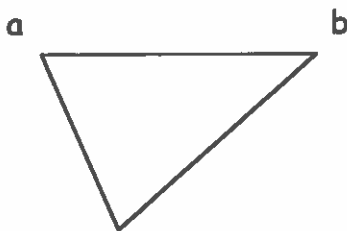
4. Name the polygon with 5 sides.

Exercise 2

1. What name is given to a triangle with :-

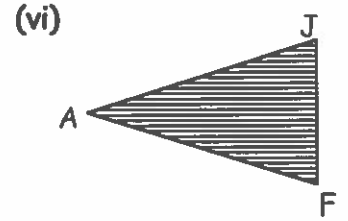
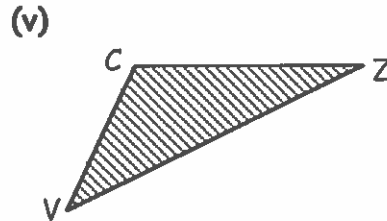
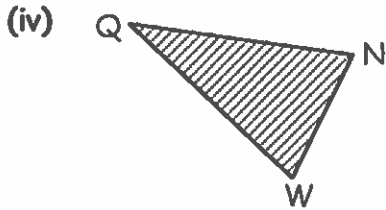
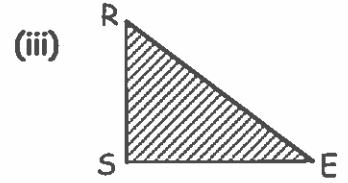
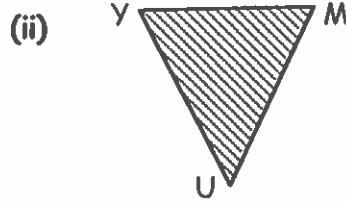
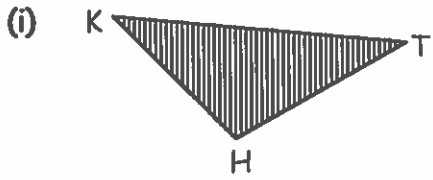
- | | |
|-------------------------------------|----------------------------------|
| a all 3 sides equal in length | b 2 of its sides equal in length |
| c sides, all of a different length? | |

2. State which type of triangle each of the following is :-



Exercise 3

1. a Name each triangle using 3 capital letters and a "Δ" sign. (e.g. ΔABC).
 b State whether it is acute angled, right angled or obtuse angled.



Exercise 4

Step 1

name it using
3 letters

Step 2

describe it as :-

- (i) acute-angled
- (ii) right-angled
- (iii) obtuse-angled

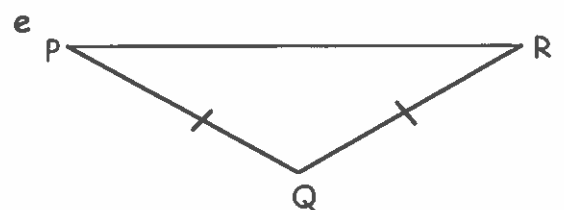
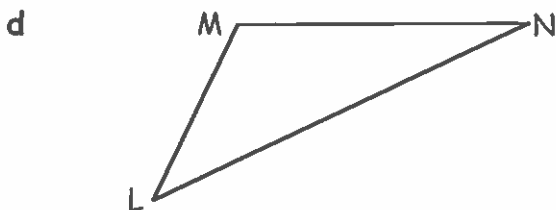
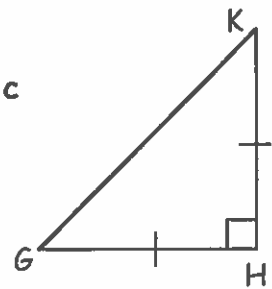
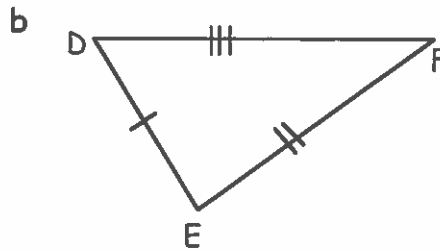
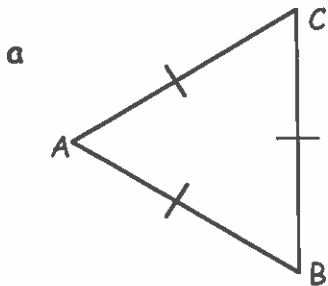
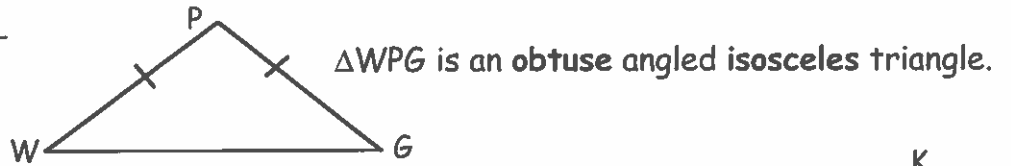
Step 3

followed by :-

- (i) isosceles triangle
- (ii) equilateral triangle
- (iii) scalene triangle

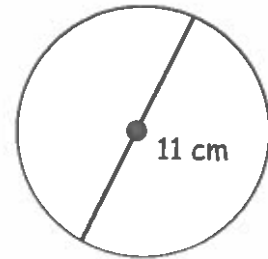
1. Use each of the 3 steps above to describe each of the following triangles :-

FOR EXAMPLE :-



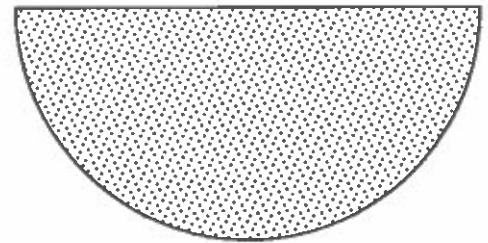
Exercise 5

1. This is a sketch of a circle whose diameter is 11 cm.
What must the length of its radius be ?

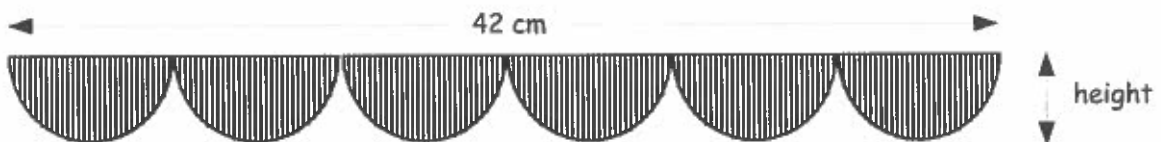


2. The radius of a circle is 13.5 millimetres.
What must the length of its diameter be ?

3. Look at this semi-circle.
a Use a ruler to measure its diameter.
b Write down what size its radius must be.



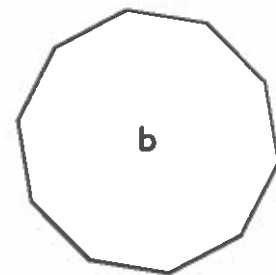
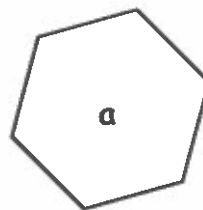
4. The length of the shape below is 42 cm.



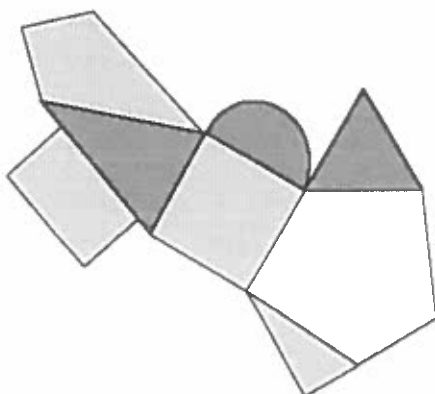
- a What must the diameter of each semi-circle be ?
b What is the height of the shape ?

Revision Exercise

1. Write down the names of each of these two polygons.



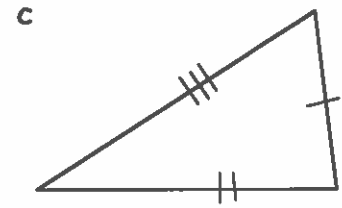
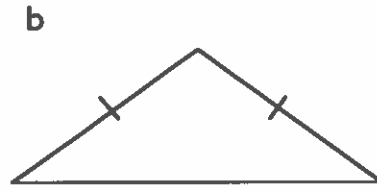
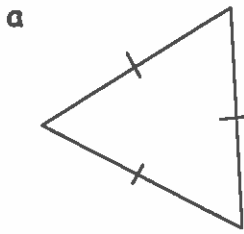
- 2.



Name all the mathematical shapes you can see in the figure shown opposite.

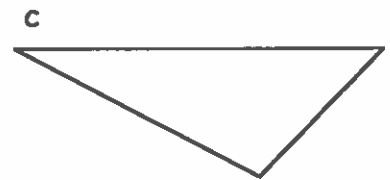
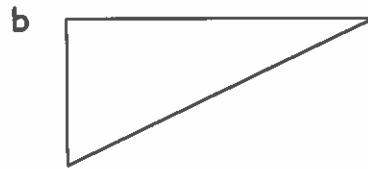
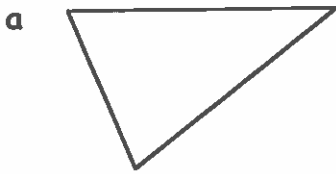
3. Describe each of these triangles by using an expression from this list.

scalene triangle
isosceles triangle
equilateral triangle

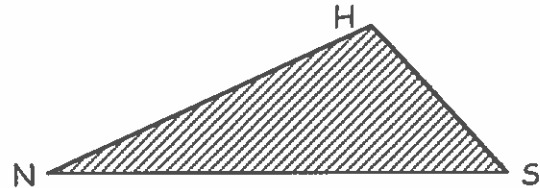


4. Describe each of these triangles by using an expression from this list.

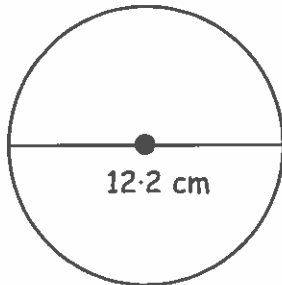
right angled
acute angled
obtuse angled



5. Name and describe this triangle fully.



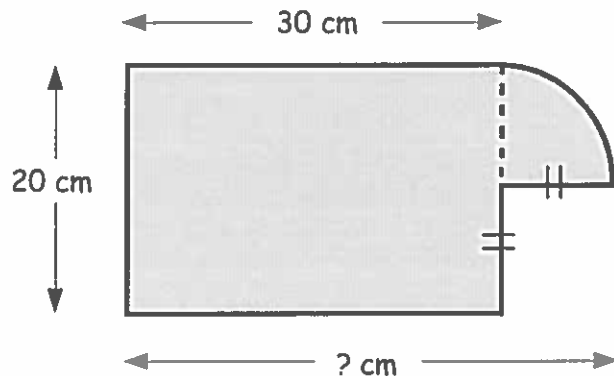
6.



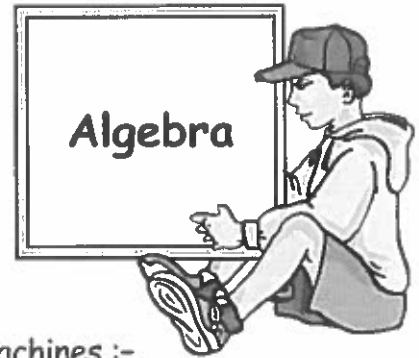
The diameter of a circle is 12.2 centimetres.
Write down the length of its radius.

7. This shape consists of a rectangle measuring 30 cm by 20 cm, with a quarter circle on the end.

Calculate the full length of the shape. (marked ?)
(Don't measure it with a ruler).

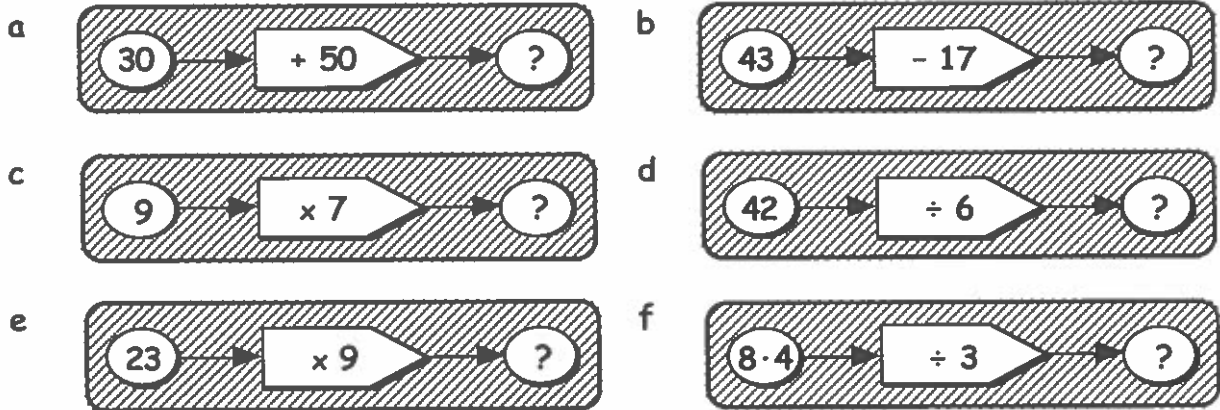


CHAPTER 10

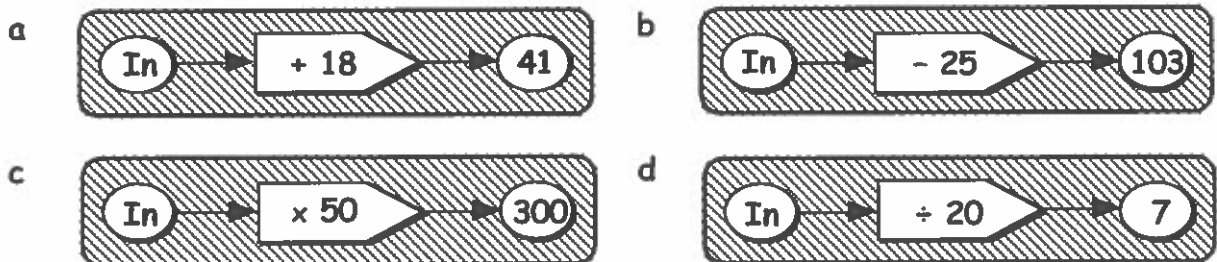


Exercise 1

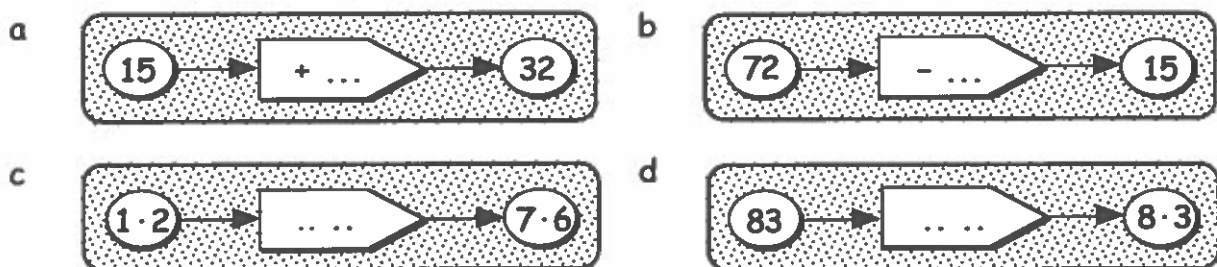
1. Write down what number comes OUT of these number machines :-



2. What numbers must have been put IN these number machines ?



3. Write down the missing number (and/or sign) in each machine below :-

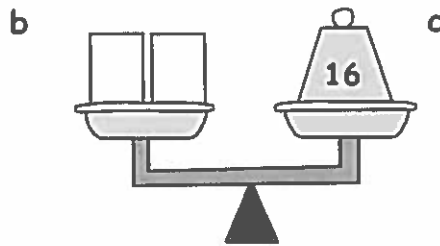
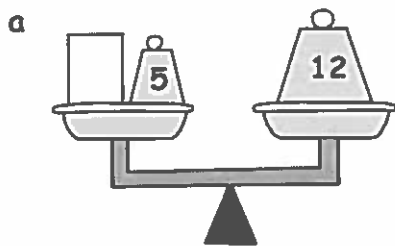


Exercise 2

1. Find the value of * in each of the following :-

- | | | | | | |
|---|-----------------------|---|----------------------|---|--------------------|
| a | $7 + * = 16$ | b | $24 - * = 14$ | c | $9 \times * = 81$ |
| d | $54 \div * = 6$ | e | $* - 5 = 12$ | f | $* \times 7 = 56$ |
| g | $* \div 10 = 9\cdot7$ | h | $* \times 100 = 401$ | i | $* \div 100 = 45.$ |

2. Look at the scales shown below and find the weight of a box each time :-



3. For these problems, make up a statement (equation) involving +, -, \times or \div along with a * to stand for the unknown quantity, and find the value of the *.

a When a basket of apples was shared between 7 growers, each got 20.
How many apples were originally in the basket ?



b When a piece of ham and a turkey were weighed, their total weight was 12.5 kg.
If the turkey weighed 5.8 kg, what was the weight of the ham ?



Exercise 3

1. Copy each of the following and find the missing value each time :-

a $d + 9 = 17$

b $m - 6 = 19$

c $6 \times n = 54$

d $\frac{h}{3} = 7$

e $p + 17 = 17$

f $q - 30 = 70$

g $g \times 9 = 45$

h $u \div 10 = 2$

i $1.7 + b = 5.3$

j $35 - c = 6$

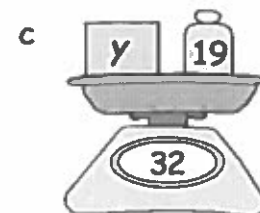
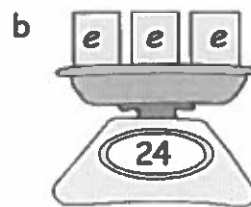
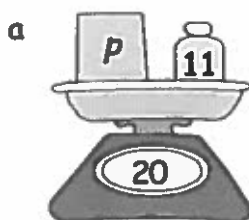
k $8 \times w = 72$

l $63 \div f = 9$

2. For each of the following :-

(i) make up an equation using the letter shown.

(ii) solve the equation to find the value of the letter.



3. The total cost for 6 children on a day out to a theme park was £210.
Make up an equation and solve it to find the cost for each of them.



4. When some rollos are shared equally, Mark, Bob and Alan get 9 each.

Make up an equation and solve it to find how many rollos there were to begin with.

Revision Exercise

1. Copy the following and find what * stands for :-

a $6 + * = 17$
 $* = \dots$

b $19 - * = 4$
 $* = \dots$

c $5 \times * = 45$
 $* = \dots$

2. What number does  stand for each time here :-

a $7 + \text{circle with dots} = 23$

b $\text{circle with dots} \times 4 = 28$

c $\frac{\text{circle with dots}}{5} = 8$

d $\text{circle with dots} - 15 = 15$

e $\frac{36}{\text{circle with dots}} = 4$

f $27 \times \text{circle with dots} = 0$

g $\frac{\text{circle with dots}}{4} = 2.5$

h $\text{circle with dots} + 1.1 = 11$

i $\text{circle with dots} - 120 = 0.$

3. In each of the following, the symbol \square stands for +, -, \times or \div .

Decide which symbol is needed each time here :-

a $9 \square 3 = 6$

b $6 \square 5 = 30$

c $21 \square 3 = 7$

d $18 \square 6 = 12$

e $72 \square 8 = 9$

f $23 \square 5 = 115$

g $6.1 \square 6.1 = 1$

h $3.9 \square 2.7 = 6.6$

i $135 \square 90 = 45.$

4. Solve the following equations (find the value of the letter) :-

a $x + 3 = 23$

b $a - 7 = 34$

c $6 \times d = 42$

d $\frac{h}{8} = 8$

e $r - 30 = 30$

f $63 \div g = 7.$

5. Tinkie weighs 13 pounds and Dinkie weighs * pounds.

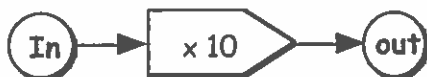
Their combined weight is 31 pounds.

a Make up an equation using *.

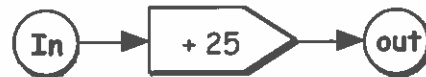
b Solve it to find Dinkie's weight.



6.



Machine A



Machine B

a What number comes out when :-

(i) 20 is put into machine A

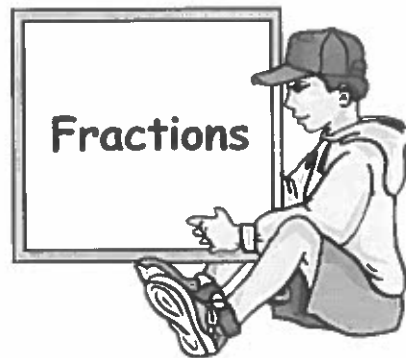
(ii) 35 is put into machine B ?

b What number has gone in when :-

(i) 1.5 comes out of machine A

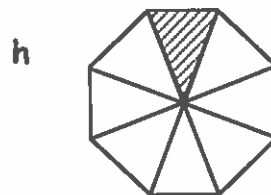
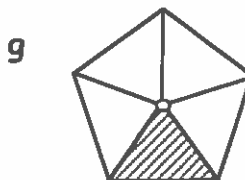
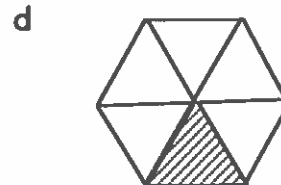
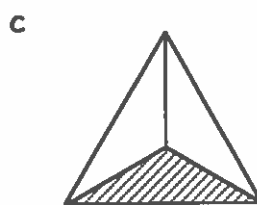
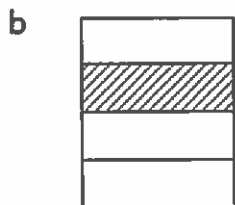
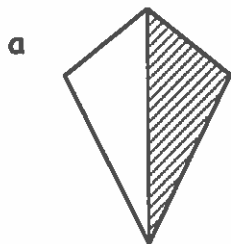
(ii) 1000 comes out of machine B ?

CHAPTER 11



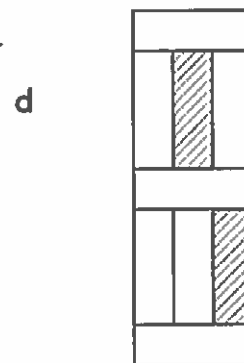
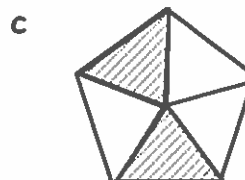
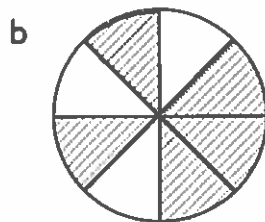
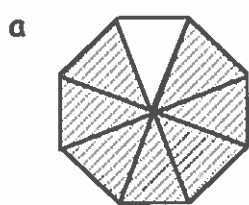
Exercise 1

1. What fraction of each shape is the shaded bit ?



Exercise 2

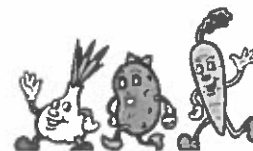
1. For each of the following, write the fraction that is shaded :-



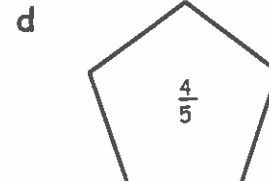
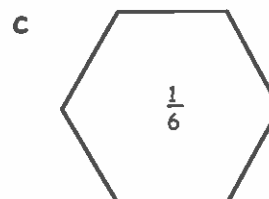
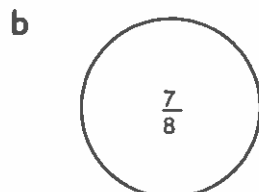
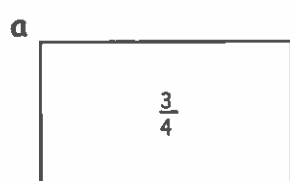
2. Jenny has 19 vegetables in her basket. She has 10 potatoes, 7 carrots and the rest are onions.

What fraction of the 19 are :-

- a potatoes b carrots c onions ?



3. Trace or copy each of these shapes, divide it up and shade the fraction asked for :-



Exercise 3

1. Write down two fractions equivalent to :-

a $\frac{1}{2}$

b $\frac{2}{5}$

c $\frac{4}{7}$

d $\frac{5}{9}$.

2. Simplify as far as possible :-

a $\frac{6}{8}$

b $\frac{8}{10}$

c $\frac{10}{14}$

d $\frac{30}{50}$

e $\frac{24}{32}$

f $\frac{30}{45}$

g $\frac{15}{21}$

h $\frac{16}{20}$

i $\frac{60}{80}$

j $\frac{10}{200}$

k $\frac{80}{120}$

l $\frac{75}{100}$

m $\frac{44}{55}$

n $\frac{38}{57}$

o $\frac{480}{600}$

p $\frac{49}{147}$.

Exercise 4

1. Find :-

a $\frac{1}{3}$ of 12

b $\frac{1}{2}$ of 16

c $\frac{1}{4}$ of 20

d $\frac{1}{5}$ of 30

e $\frac{1}{6}$ of 42

f $\frac{1}{7}$ of 35

g $\frac{1}{8}$ of 32

h $\frac{1}{9}$ of 63

i $\frac{1}{6}$ of 318

j $\frac{1}{4}$ of 648

k $\frac{1}{7}$ of 931

l $\frac{1}{10}$ of 320.

2. a There are 30 days in June.
Alf cut his lawn at some point on $\frac{1}{6}$ of those days.
On how many days did he cut his lawn?



b



Tony had a fine set of 24 teeth but had to have a quarter of them removed due to infection.
How many teeth was Tony left with?

3. Noreen was on a 50 mile journey to her uncle Ted's.
She ran out of petrol one tenth of the way there.
- a How far had Noreen driven before she ran out?
- b How many miles had she still to go to her uncle's?



Exercise 5

1. Find :-

a $\frac{2}{3}$ of £18

b $\frac{3}{4}$ of £28

c $\frac{2}{5}$ of £35

d $\frac{3}{7}$ of £21

e $\frac{5}{8}$ of £40

f $\frac{7}{10}$ of £60

g $\frac{2}{9}$ of £72

h $\frac{5}{16}$ of £48

i $\frac{7}{20}$ of £120

j $\frac{4}{25}$ of £250

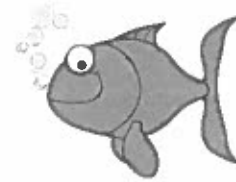
k $\frac{11}{100}$ of £300

l $\frac{9}{15}$ of £75.

2. Of the 20 fish in a garden pond $\frac{3}{5}$ are goldfish.

a How many goldfish are in the pond ?

b How many other breeds of fish are there ?



3.



There are 280 trees in an orchard, of which $\frac{5}{7}$ are apple trees and the rest pear trees.

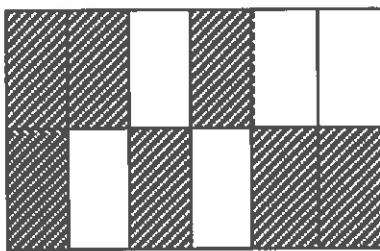
a How many apple trees are there in the orchard ?

b How many pear trees ?

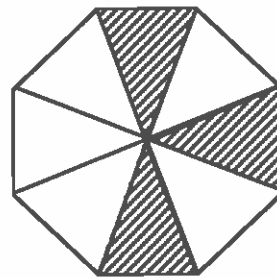
Revision Exercise

1. For each shape, say what fraction has been shaded :-

a



b



2. For each shape in question 1, write down the fraction **not** shaded.

3. Copy and complete :-

a $\frac{1}{5} = \frac{?}{10}$

b $\frac{2}{3} = \frac{8}{?}$

c $\frac{?}{9} = \frac{55}{99}$.

4. Write down **two** fractions equivalent to :-

a $\frac{1}{8}$

b $\frac{2}{7}$

c $\frac{9}{10}$.

5. Write each of these fractions in their **simplest** form :-

a $\frac{8}{12}$

b $\frac{14}{35}$

c $\frac{32}{48}$

6. Find :-

a $\frac{1}{4}$ of £28

b $\frac{1}{7}$ of 49 grams

c $\frac{1}{11}$ of 77 dollars.

7. Amy has 24 plants in her greenhouse.

- a **quarter** are busy lizzies
- a **third** are pansies
- a **sixth** are lobelia
- the rest are begonia.



a How many busy lizzies does Amy have ?

b How many lobelia ?

c How many begonia ?

8. Find :-

a $\frac{2}{5}$ of £30

b $\frac{5}{7}$ of 210 grams

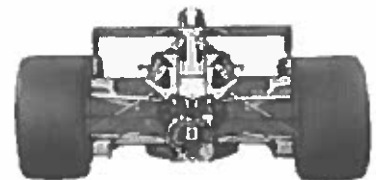
c $\frac{5}{8}$ of 7200 euros.

9. 120 racing cars started a race.

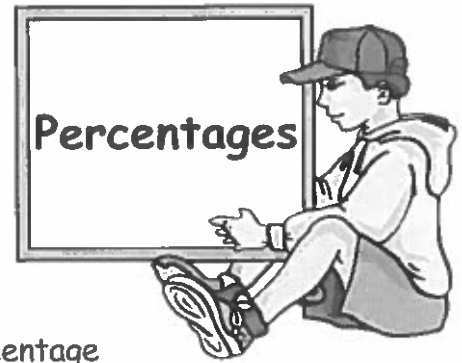
After twenty laps, $\frac{1}{6}$ of them dropped out of the race.

By the end of the race $\frac{9}{10}$ of the cars **remaining** had ran out of fuel.

How many racing cars had no fuel left in their tanks ?



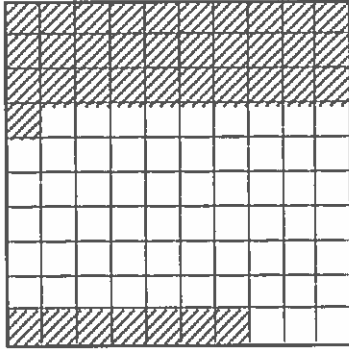
CHAPTER 12



Exercise 1



1.



Write down what percentage of the whole square the shaded part is.

2. Write each of these as a fraction :-

- a 27% b 13% c 9% d 1%.

3. Write each of these as a decimal :-

- a 39% b 94% c 10% d 4%.

4. Write each fraction or decimal as a percentage :-

- a $\frac{73}{100}$ b 0.05 c $\frac{7}{100}$ d 0.8.

5. Write each percentage as a fraction in its simplest form :-

- a 40% b 8% c 85% d $12\frac{1}{2}\%$.

Exercise 2



1. Copy and complete each of the following :-

- a $\frac{7}{25} = 7 \div 25 = 0.\dots = \dots\%$ b $\frac{25}{80} = 25 \div \dots = 0.\dots = \dots\%$.

2. Change each of the fractions shown to a decimal then to a percentage :-

- a $\frac{9}{36}$ b $\frac{21}{28}$ c $\frac{14}{40}$ d $\frac{80}{500}$.



3. George scored $\frac{42}{75}$ in a his Art exam. Change his mark to a percentage.

4.



Of the 20 pies in a baker's window, 13 of them were filled with cherries.

What percentage of the pies were cherry pies ?

Exercise 3




1. Work out each of the following :-

- a 50% of £18 b 25% of 20p c 10% of 90 cm d 50% of £49
 e 25% of 300 g f 10% of £2550 g 25% of £2 h 10% of £3.40.

2. a Tiger had £670. He spent 50% of that, buying golf clubs.
 How much did Tiger pay for the clubs ?



b  Toby weighed 76 kilograms.
 He ate too many burgers and put on 25% of his weight.
 How many kilograms did he put on ?

c This £299 camera is on offer in a sale with 10% off.
 What is the sale price of the camera ?



10% OFF

Exercise 4



1. Calculate each of the following :-

- a 12% of £200 = $(12 \div 100) \times £200 = £.....$
 b 18% of £60 c 32% of 50p d 85% of 28 km e 91% of 180 mm
 f 6% of 20 kg g 22.5% of £120 h 2.4% of £800 i 8.75% of £6000.

2. a There are 120 tennis balls in a ball machine. 55% of them are yellow.


(i) How many balls are yellow ? (ii) How many are not yellow ?



b Of the 2550 cabbages bought in by a supermarket chain,
 8% had been part eaten by caterpillars.

How many cabbages was this ?



c  Kath earns £32 800 per year. Ken earns £30 020 per year.
 Kath got a 3% pay rise and Ken got a 4% rise.

In money terms, who got the bigger rise and by how much ?

d A Boeing 747 was set out to carry 480 passengers.

$12\frac{1}{2}\%$ of the seats were business class.

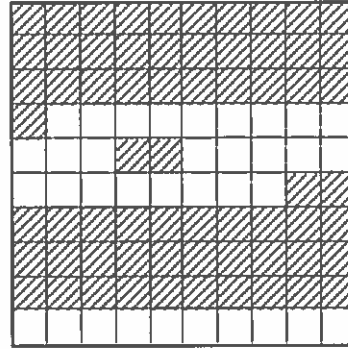
How many of the 480 seats were business class ?



Revision Exercise



1. Write down what percentage of the whole square the shaded part is.



2. Write each of the following as a fraction :-
 a 67% b 11% c 39% d 3%.
3. Write each of the following as a decimal :-
 a 83% b 14% c 20% d 8%.
4. Write each of the following as a fraction and as a decimal :-
 a 13% b 67% c 1% d 90%.
5. Write each fraction or decimal as a percentage :-
 a $\frac{81}{100}$ b 0.94 c $\frac{5}{100}$ d 0.09.
6. Find :-
 a 50% of 60p b 25% of 72 km c 50% of £13 d 10% of 9 cm.

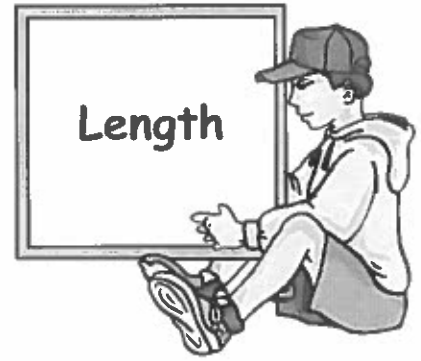
You may use a calculator from now on, but you must show working.



7. Find :-
 a 14% of £30 b 38% of 65 mm c 12.5% of £192 d 5.2% of 300 kg.
8. Of the 3200 houses built in the new Phoenix estate 62.5% of them have an adjoining garage.
 87½% of these garages have electric doors.
- a How many houses were built with an adjoining garage ?
 b How many garages were not built with an electric door ?
9. The cost of this laptop in a local store was £332 last month.
 This month, the price has risen by 7½%. What's the price now ?







CHAPTER 13a

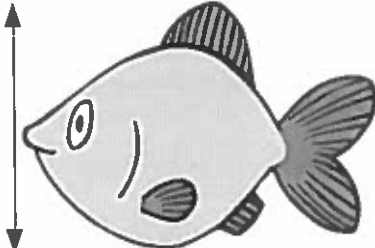
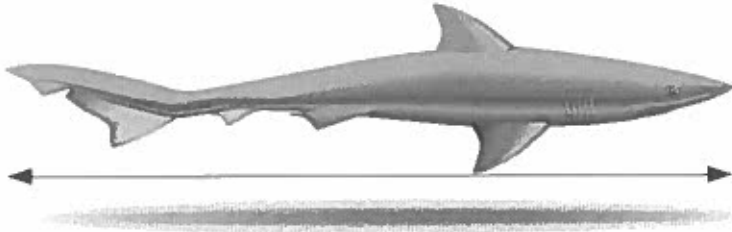


Exercise 1

1. Use your ruler to measure the length of these lines, in centimetres. (e.g. 3.6 cm).

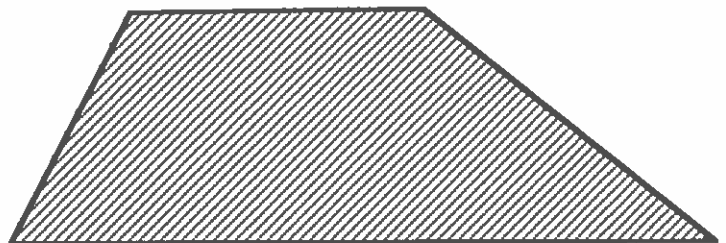
- a  b 
- c  d 

2. Measure the dimension for each of these toy plastic fish, in millimetres.

- a  b 

3. a Measure the four sides of this shape, in centimetres.

b Calculate the difference between the longest and the shortest side.



4. a Use your ruler to draw :-

(i) a square of side 50 mm

(ii) a rectangle measuring 7.5 cm by 1.5 cm.

b Measure and write down the length of the diagonals for each shape.

Exercise 2

1. How many :-

a centimetres are in 1 metre

b metres are in 1 kilometre

c millimetres are in 1 centimetre

d millimetres are in 1 metre

e centimetres are in 1 kilometre

f millimetres are in 1 kilometre ?

2. How many millimetres are there in :-

a 9 cm

b 6 cm 2 mm

c 12.3 cm


d quarter of a cm ?

3. How many centimetres are equal to:-
 a 40 mm b 85 mm c 2500 mm d 3 mm ?
4. How many centimetres are there in :-
 a 6 m b half a metre c 500 m d 0.01 m ?
5. How many metres are equal to :-
 a 800 cm b 1300 cm c 75 cm d 20 cm ?
6. How many metres are equal to:-
 a 5 km b 2 km 250 m c 3.7 km d 0.8 km ?
7. How many kilometres are there in :-
 a 6000 m b 4250 m c 810 m d 200 000 m ?

Exercise 3


1. Young Donnie balanced some pot noodle tubs on top of each other.
 The tubs were 96 mm, 107 mm, 145 mm and 160 mm in height.
 a How high did the four tubs reach ?
 b Write this height in centimetres.



2.  Joe was shortening a 2.2 metre door.
 He sawed 69 mm off the top.
 a Change 2.2 metres to millimetres.
 b Write down the new length of the door, in millimetres.

3. Eight sugar mice are placed in a row, making a total length of 36 cm.
 Calculate the length of one mouse, in millimetres.



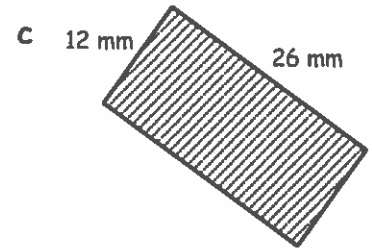
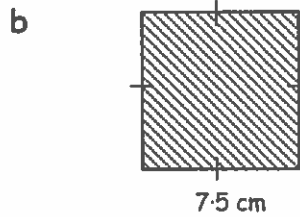
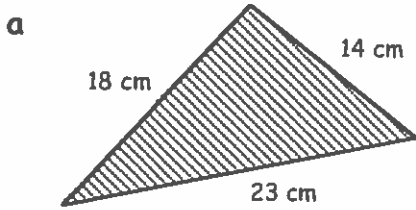
4.  Wendy came first in the Dunoon Games high jump competition
 with a best jump of 1.84 metres.
 The world record high jump for ladies is 2.09 metres.
 How many centimetres below the world record was Wendy ?

5. A £2 coin has a diameter of 28.4 mm.
 If 200 of them are placed in a straight line
 how far will the line of coins stretch, in metres ?

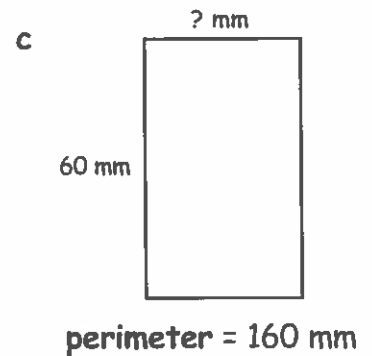
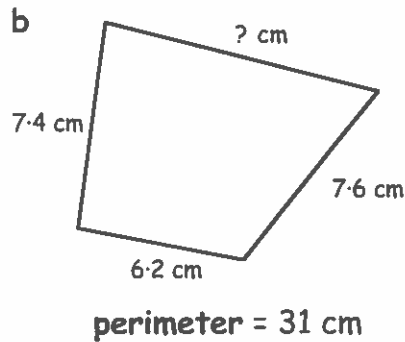
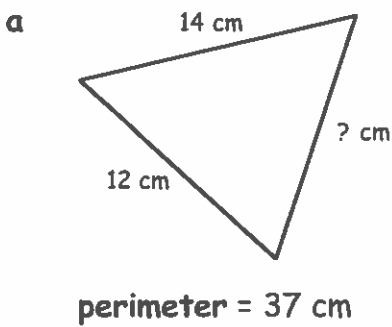


Exercise 4

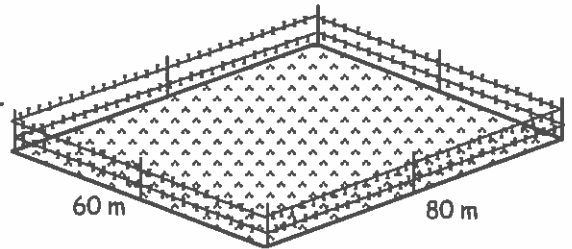
1. Calculate the perimeter of each of the following shapes :-



2. Calculate the lengths of the missing sides of the following figures :-



3. Farmer Tait has a rectangular field.
He surrounds it with 2 strands of barbed wire.
The wire costs 50p per metre.
Calculate the total cost of the wire.



Revision Exercise

1. With your ruler, measure the length of these lines, in **centimetres**.

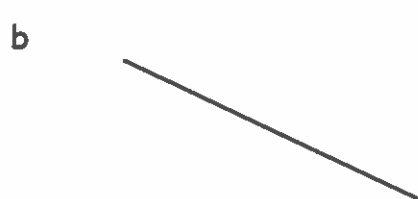
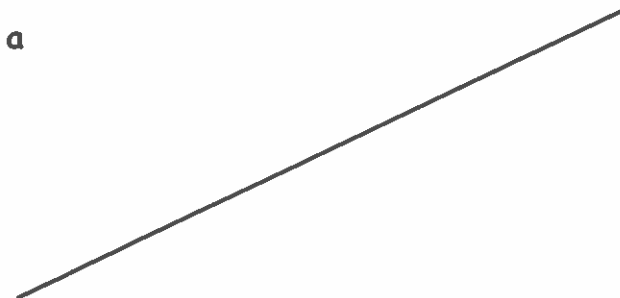


2. Write down the lengths of the following lines in :-

(i) millimetres

(ii) centimetres

(iii) centimetres and millimetres.



3. Use a ruler to draw a line 140 millimetres long.

4. Change :-

a 3 m to cm

b 40 cm to mm

c 5.9 km to m

d 4000 m to km

e 460 cm to m

f 70 mm to cm

g 3700 m to km

h 1 m 20 cm to cm

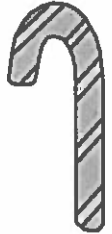
i 17.5 metres to cm

j $4\frac{1}{2}$ cm to metres

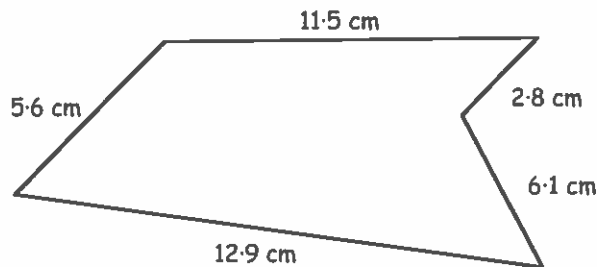
k 19.2 cm to mm

l 870 cm to m.

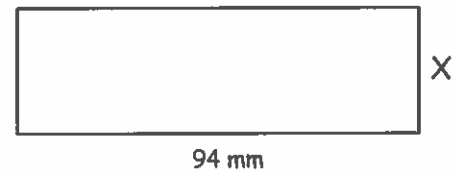
5. Jessie had a candy stick 21 cm long. She bit off 28 mm from the bottom. What length of candy stick was left, in millimetres?



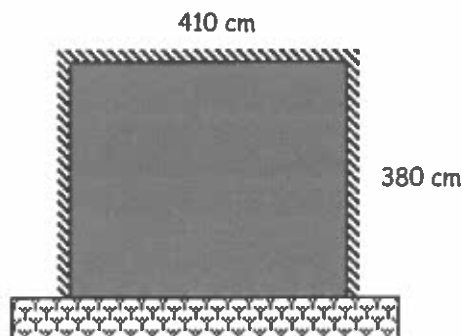
6. Calculate the perimeter of this shape :-



7. The perimeter of this rectangle is 228 mm. Calculate the length of the side marked X.



8. Mr Stainrod is to put up a concrete border round 3 sides of his rectangular front lawn (not the wall side).



Bordering costs £10 per metre length in Homestore.

a How many metre lengths will he need to buy?

b How much will the job cost him?

CHAPTER 13b

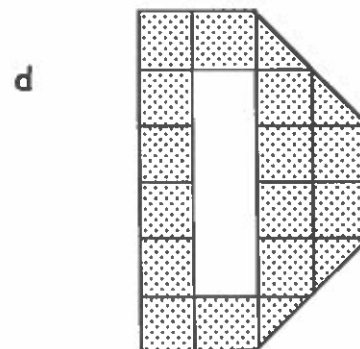
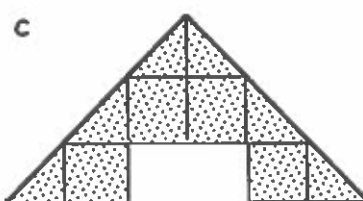
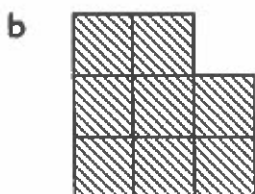


Exercise 1

= 1 cm²



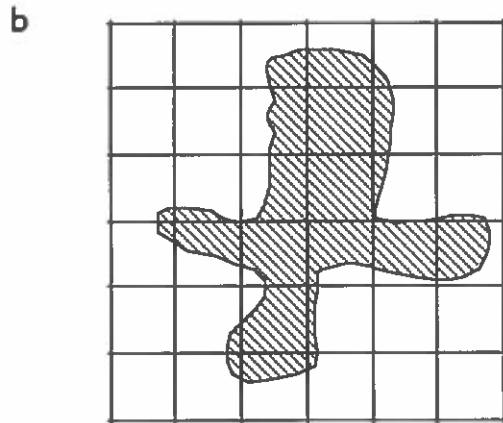
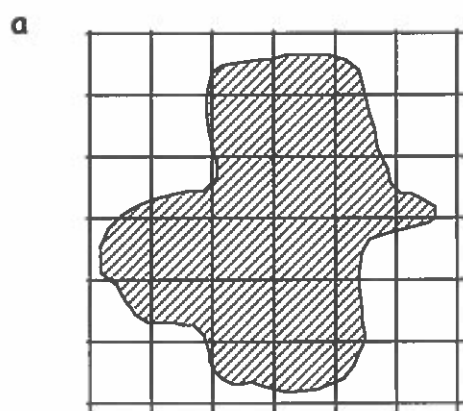
1. Write down the area of these shapes, in cm² :-



2. Estimate the areas of the two shapes below as follows :-

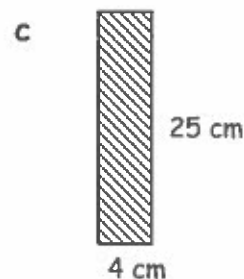
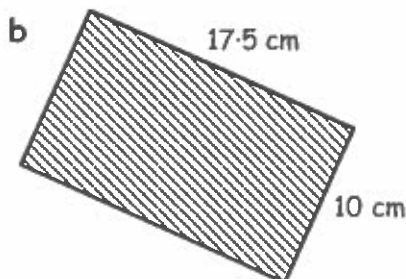
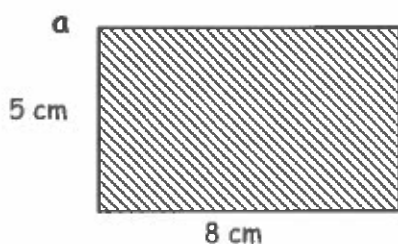
If more than $\frac{1}{2}$ a box is covered \rightarrow count it as 1 cm²

If less than $\frac{1}{2}$ a box is covered \rightarrow do not count it at all.



Exercise 2

1. Calculate the area, in cm², of these rectangles, using the rule "A = L x B".



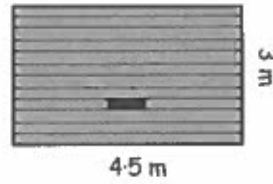
2. Sam decides to paint the fire station's double doors.

Each rectangular door is 4.5 m by 3 m.

a Calculate the area covered by both doors.

b A litre of metal paint covers 13.5 m^2 .
How many 1 litre tins will be needed for one coat of paint?

c If each tin costs £20, what's the cost of giving the doors 3 coats?

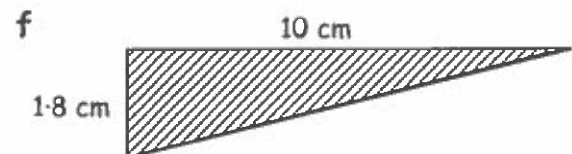
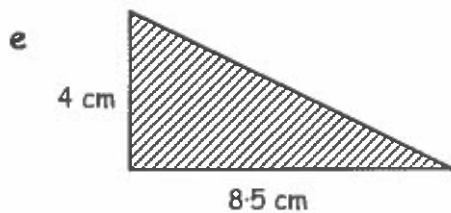
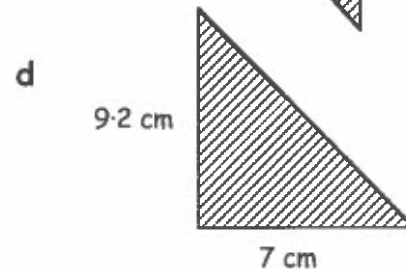
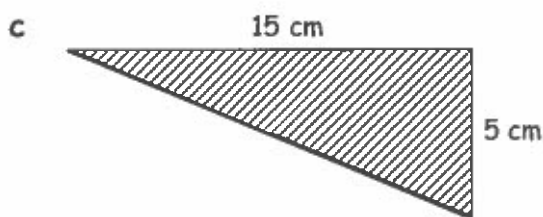
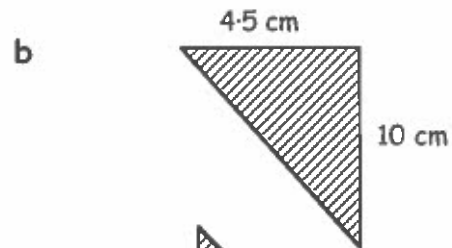
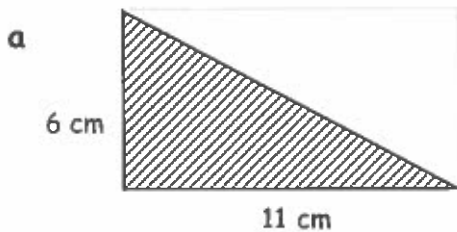


Exercise 3

1. For each of these triangles :-

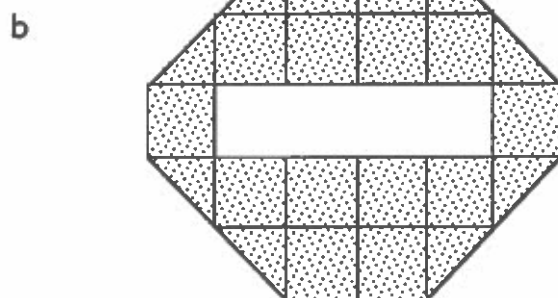
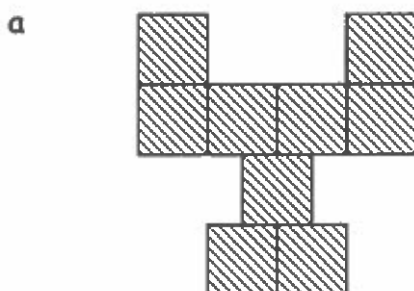
(i) Calculate the area of the surrounding rectangle.

(ii) Use your answer to work out the area of the triangle.

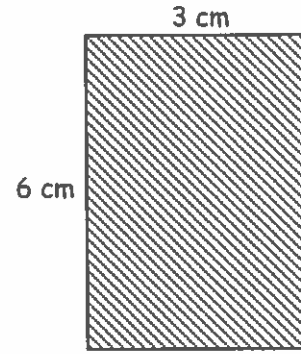


Revision Exercise

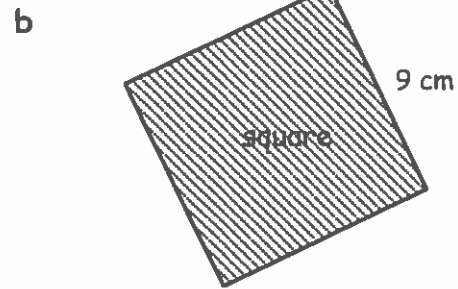
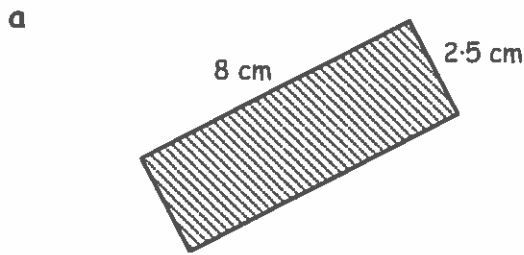
1. Find the area of these shapes, in cm^2 .



2. a Draw a rectangle 6 cm long by 3 cm wide.
 b Divide the rectangle neatly into 1 cm square boxes and count the boxes to find the area of the rectangle.
 c Now write down and use the formula to calculate its area.



3. Calculate the area of each of these shapes :-

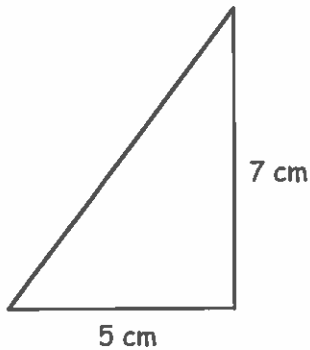


4. The floor of this town hall has to be re-carpeted. It is rectangular in shape and measures 25 m by 6 m.

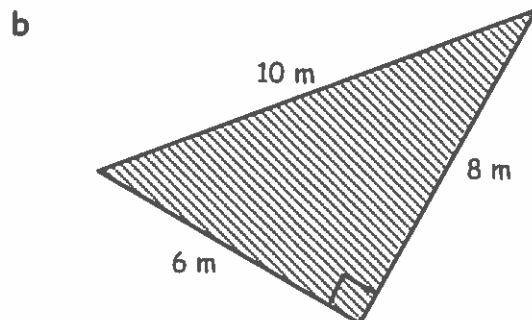
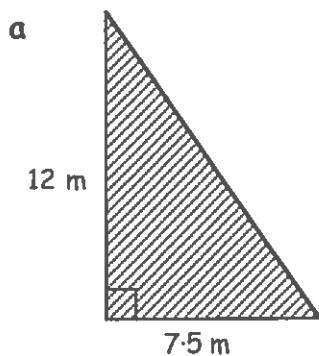
- a Calculate the area of the floor in m^2 .
 b If the carpet costs £30 per square metre, calculate the cost of carpeting the floor.



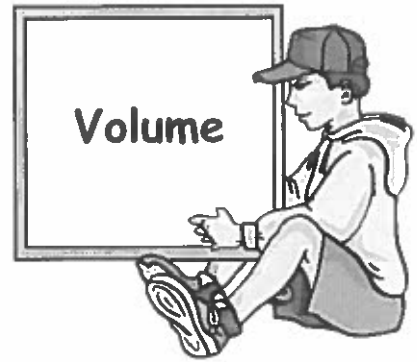
5. a Make an accurate drawing of this right angled triangle.
 b Draw a surrounding rectangle and calculate its area.
 c Now write down the area of the triangle.



6. Calculate the area of these right angled triangles in m^2 .

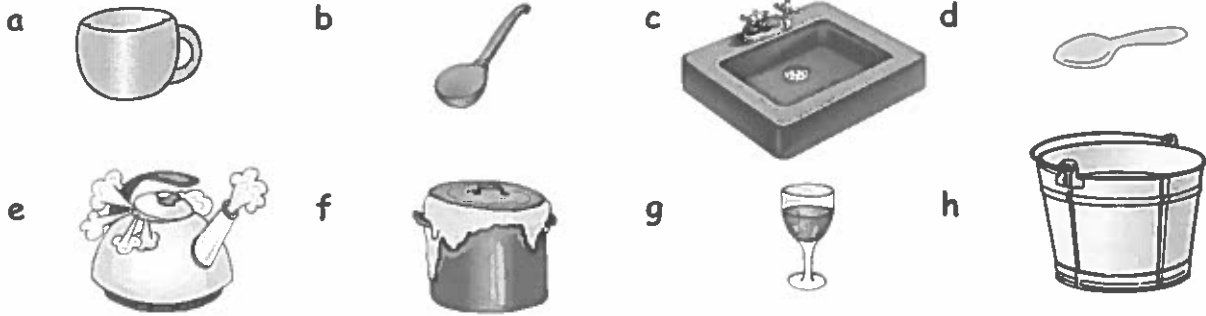


CHAPTER 13c



Exercise 1

1. Put these shapes in order, starting with the one which holds the most liquid :-



2. Write down the following objects in order, starting with the smallest volume :-

- a bathroom sink - thimble - bottle of shampoo - litre mug.
- b ocean - puddle - pond - bath - lake.

3. Florence has to take 2 tummy bug pills 4 times per day.
 Doctor has prescribed 2 tubs of tablets each holding 48 tablets.
 How many days will these tubs last Florence?

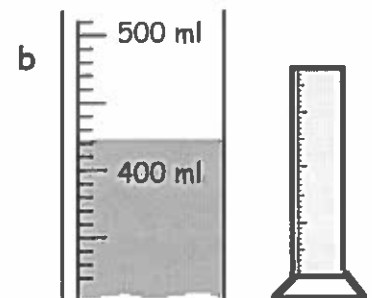
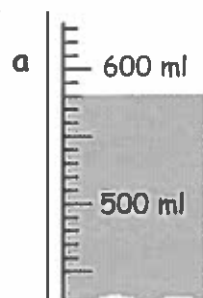


Exercise 2

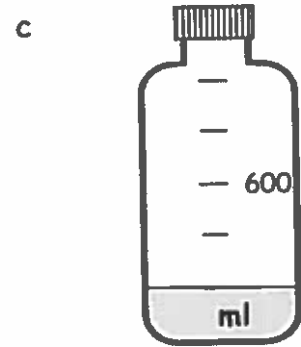
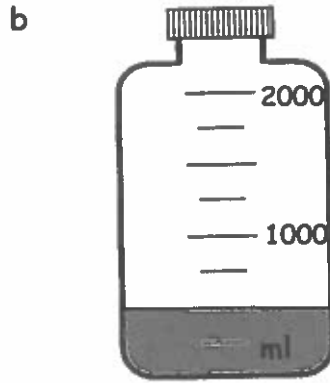
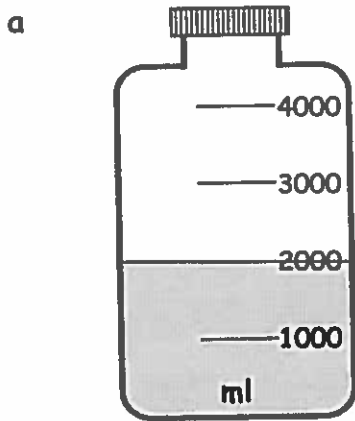
1. a If a dessert spoon holds 15 ml of liquid, how many spoonfuls will a 150 ml paper cup hold ?
 b Jerry makes 4 one litre jugs of a cocktail.
 How many 250 ml tankards can he fill from the jugs ?



2. Here are close up readings on two beakers.
 Read the amount of liquid in each.



3. Write down the volume of liquid in each jar :-



4. Change the following number of litres to millilitres :-

a 30 litres

b 1.7 litres

c 0.4 litres

d 0.02 litres.

5. Change from millilitres to litres :-

a 7000 ml

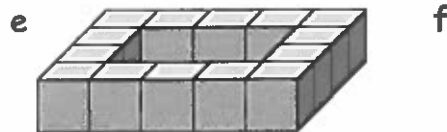
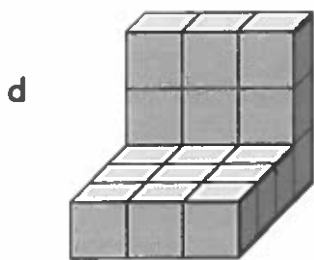
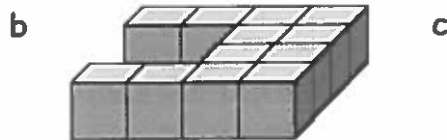
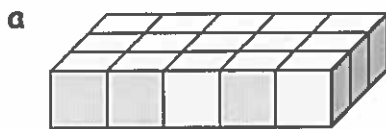
b 5240 ml

c 320 ml

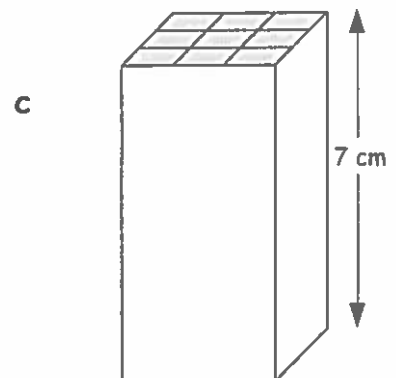
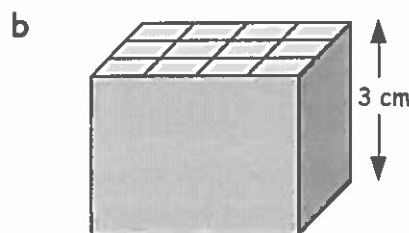
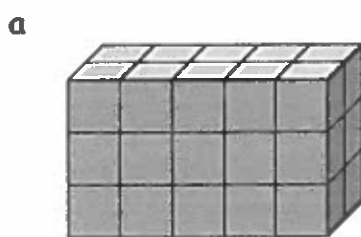
d 9 ml.

Exercise 3

1. State the volume of each of the following shapes, in cm^3 :-

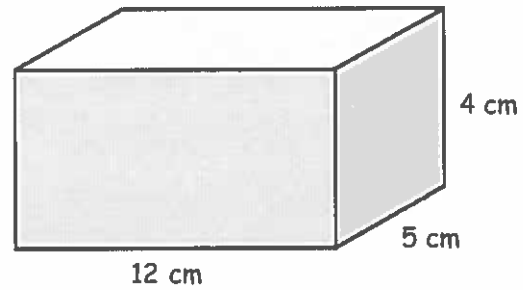


2. Calculate the volume of each cuboid :-



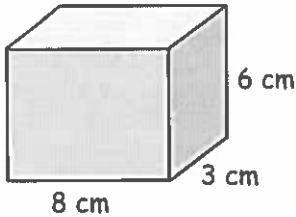
Exercise 4

1. Use the formula $V = L \times B \times H$ to work out the volume of this cuboid.

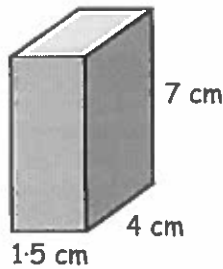


2. Calculate the volume of each of these cuboids :-

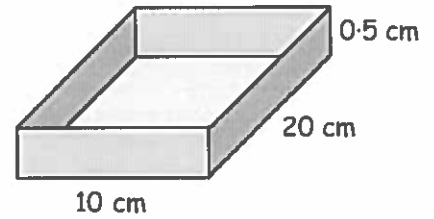
a



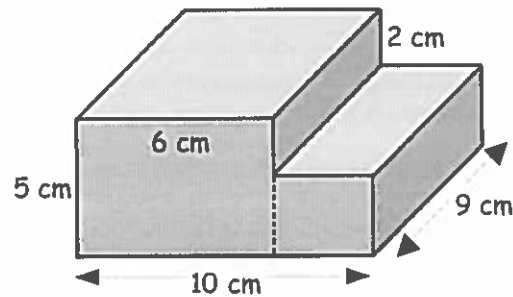
b



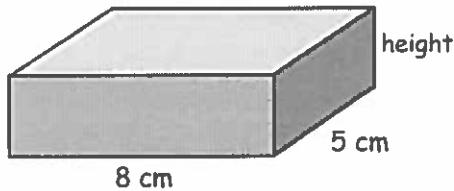
c



3. Calculate the total volume of this shape :-



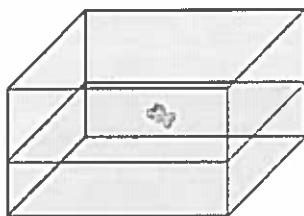
- 4.



The volume of this cuboid is 20 cm^3 .
What's its height ?

Revision Exercise

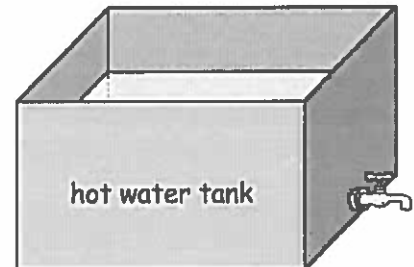
1. Put these shapes in order, starting with the one which has the least volume.



fish tank



water jug



hot water tank

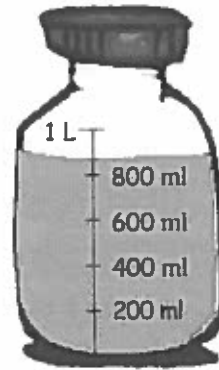
2. Bobby has to have two 5 ml spoonfuls of medicine 4 times per day.
His bottle holds 280 ml of medicine.
How many days will the bottle last ?



3. A bottle holds 720 ml of liquid, a cup holds 120 ml and a spoon holds only 5 ml.
- Tommy's wife offers him 20 ml of Limesip. How many spoonfuls is this ?
 - How many spoonfuls does the cup hold ?
 - How many cupfuls does the bottle hold ?
 - Anne makes 3 bottles of Vimtu. How many cups can she fill ?

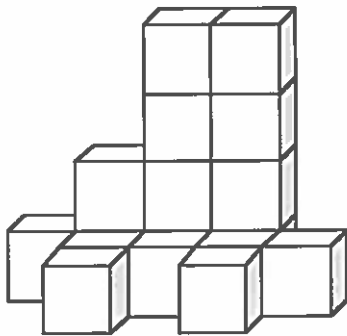


4. Write down the volume of liquid, (in millilitres), in this jar of grey paint.

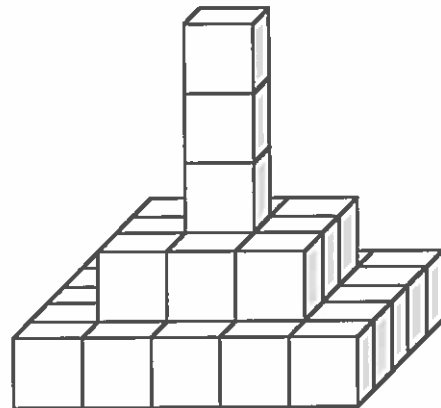


5. Write down the volume of each shape, in cm^3 .

a



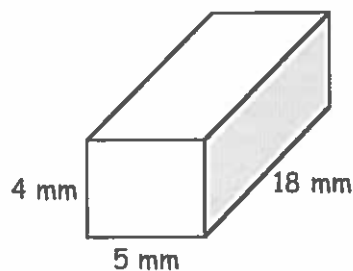
b



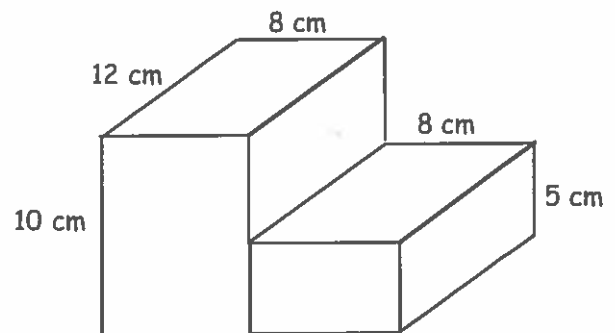
6. a Change to millilitres :- (i) 4 litres (ii) 57 litres (iii) 8.1 litres.
 b Change to litres :- (i) 7000 ml (ii) 50 000 ml (iii) 82 ml.

7. Find the volume of these shapes :-

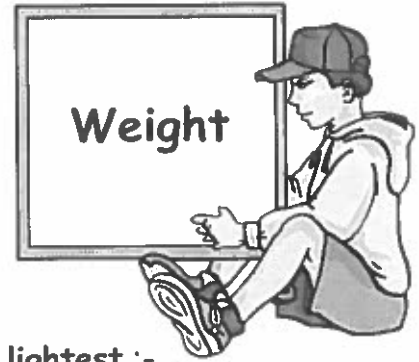
a



b



CHAPTER 13d



Exercise 1

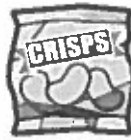
1. Put these objects in order of weight, starting with the lightest :-



eraser



motorbike



packet of crisps



sack of potatoes



chocolate bar

2. Write these weights in grams :-

a 8 kg

b 36 kg

c 2 kg 500 g

d 7 kg 846 g

e 9 kg 42 g

f 12 kg 58 g

g 26 kg 70 g

h 13 kg 4 g

i 6 kg 6 g.

3. Change these gram weights to kilograms - OR - to kilograms AND grams :-

a 7000 g

b 50 000 g

c 4800 g

d 13 100 g

e 5432 g

f 8230 g

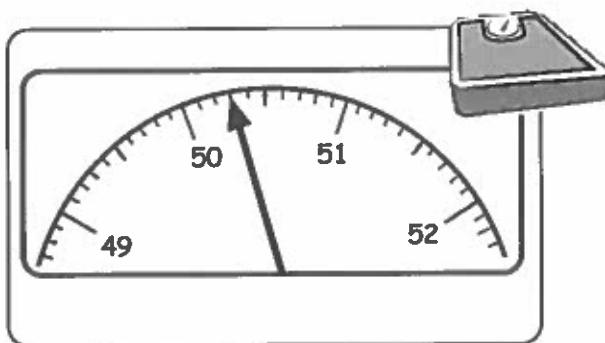
g 2001 g

h 7060 g

i 2012 g.

Exercise 2

1.



Write down the reading on the bathroom scales :-

a in kilograms

b in grams.

2. Daisy picked three and a half kilograms of blueberries to bake a pie.

She set aside 1 kg 250 grams of the blueberries to make jam.

a How many grams of blueberries did Daisy buy ?

b How many grams of blueberries were actually used in baking the pie ?



3.



Mr Tomley bought two bottles of sauce from the corner shop. Each bottle weighed 725 grams.

- What is the total weight of the bottles, in grams?
- What is their total weight in kilograms?

4. Jessie bought 3 lots of cheese.

Their total weight came to 2 kg 350 g.

The Stilton weighed 875 grams and the Cheddar weighed 850 grams.

What weight of Parmesan did Jessie buy?



Revision Exercise

1. List these farm animals in order, starting with the one that you think weighs least.

cow - hen - bull - sheep - cockerel.

2. Change from kilograms to grams :-

- | | | |
|--------------|-------------|--------------|
| a 9 kg | b 17.3 kg | c 82 kg |
| d 2 kg 600 g | e 8 kg 31 g | f 24 kg 9 g. |



3. Change these weights to kilograms - OR - to kilograms and grams :-

- | | | |
|----------|------------|-------------|
| a 5000 g | b 20 000 g | c 5200 g |
| d 2007 g | e 9030 g | f 10 003 g. |

4.



Dana and her friend Jaki weigh themselves on a set of scales.

Dana weighs 47 and a quarter kilograms. Jaki weighs 50.4 kg.

How much less does Dana weigh than Jaki, in grams?

5.



This box, containing 3 tins of soup, 2 jars of gherkins and 6 pot noodles, was delivered to Mr Fyvie.

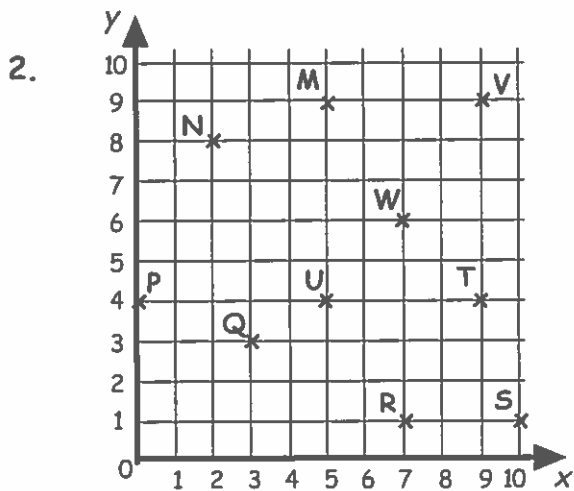
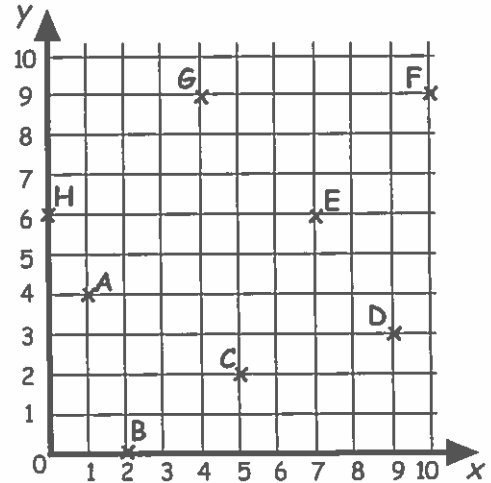
If a tin of soup weighs 400 grams, a jar of gherkins 350 grams, a pot noodle 50 grams and the box itself weighs 210 grams, what is the total weight of the box and its contents?

CHAPTER 14



Exercise 1

1. Write down the capital letter representing each point and put its coordinates next to it.
For example :- $C(5, 2)$.



- a Which point has coordinates :-
 (i) $(7, 6)$ (ii) $(0, 4)$
 (iii) $(3, 3)$ (iv) $(9, 4)$?
- b Write down the coordinates of :-
 (i) N (ii) M
 (iii) S (iv) R.

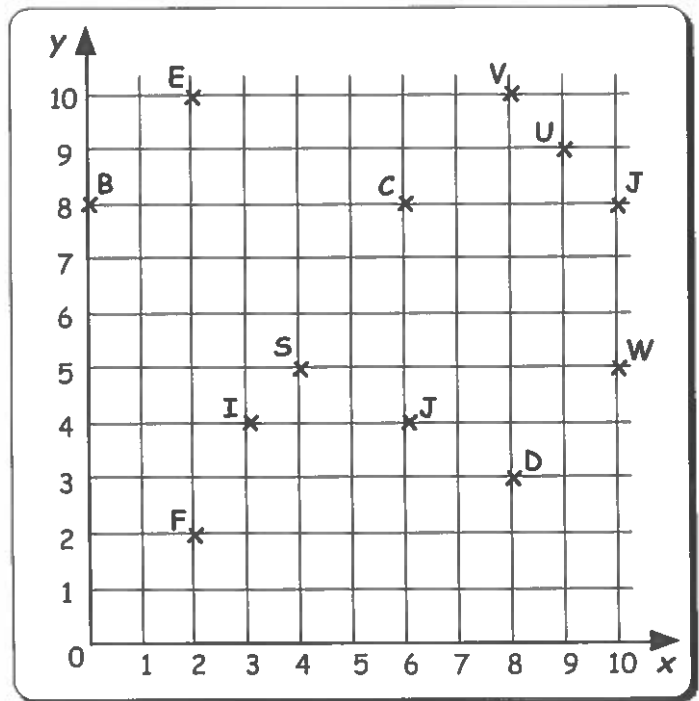
- c Four of the points can be joined to form a rectangle.
 (i) Which four points? (ii) Write down their coordinates.

3. a Draw a coordinate grid like the one in question 2 on squared paper.
 Make the horizontal and vertical axes both go up from 0 to 10.
- b Mark with a cross the following six points :-
 $C(3, 2)$ $D(7, 2)$ $E(10, 5)$ $F(7, 8)$ $G(3, 8)$ $H(0, 5)$.
- c Join C to D to E to F to G to H and back to C.
- d What shape have you formed?

Exercise 2

1. Look at this coordinate grid.

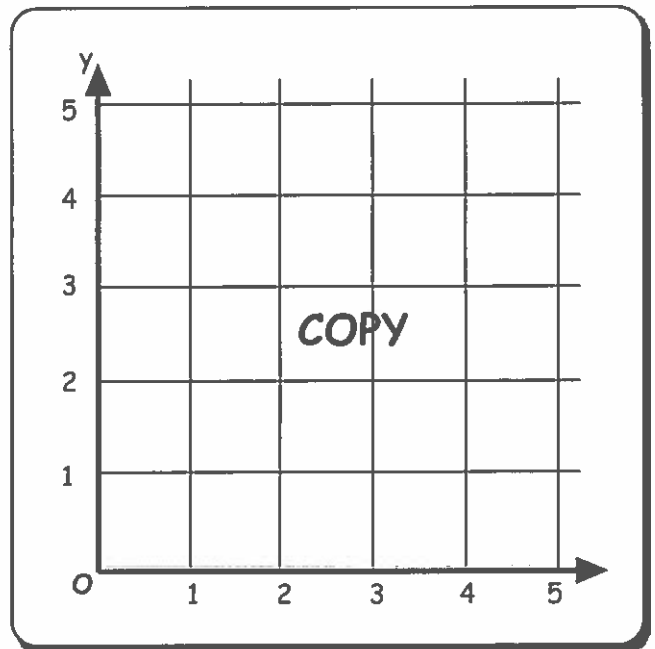
- a What are the coordinates of E?
- b Which point has coordinates (9, 9)?
- c Which point has the same y-coordinate as I?
- d Which point has the same x-coordinate as D?
- e 3 points have the same y-coordinate. Name them and write down their coordinates.
- f Which point lies on the y-axis?
- g Which points have the same x and y-coordinate?
- h What shape is the quadrilateral EVWS?
- i Is the x-axis known as the horizontal axis or the vertical axis?



2. Draw a 5 by 5 coordinate grid as shown.

- a Plot the points P(1, 4), Q(3, 0) and R(5, 4).
- b S is a point to be put on the grid so that figure PQRS is a kite with diagonals 4 boxes and 5 boxes long.
On your diagram plot the point S and write down its coordinates.
- c Join P to R and join Q to S. You now have the two diagonals of the kite.

Write down the coordinates of the point where the two diagonals meet.



Exercise 3

Draw a grid which goes 32 across and 32 up and down.

Plot the following points and join them with a ruler as you go.

STOP at the end of each section.

(1,8) (13,8) (13,10) (14,10) (14,8) (22,8) **STOP**

(2,10) (10,19) (18,10) **STOP**

(25,19) (27,21) (29,19) **STOP**

(13,16) (18,20) (29,10) **STOP**

(23,17) (28,19) (32,16) **STOP**

(20,18) (23,21) (26,18) **STOP**

(6,30) (4,28) (4,26) (6,24) (8,24) (10,26) (10,28) (8,30) (6,30) **STOP**

(12,26) (10,26) **STOP**

(6,32) (6,30) **STOP**

(12,28) (10,28) **STOP**

(2,28) (4,28) **STOP**

(8,32) (8,30) **STOP**

(6,22) (6,24) **STOP**

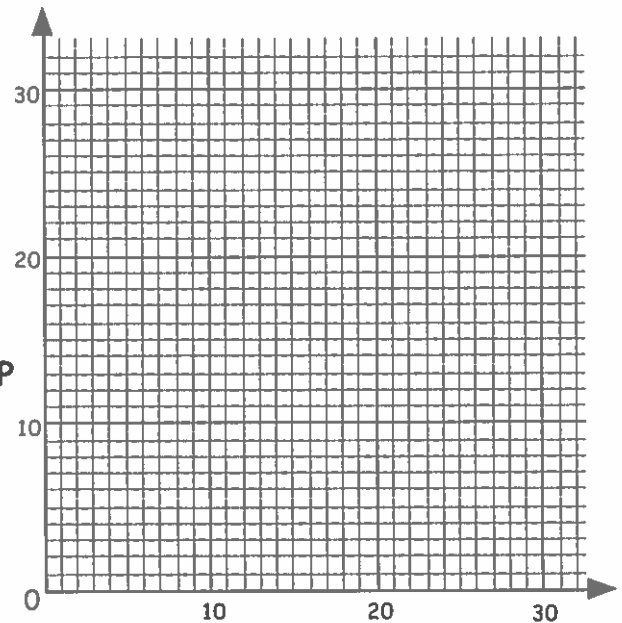
(2,26) (4,26) **STOP**

(8,22) (8,24) **STOP**

(27,4) (27,3) (28,4) (27,4) (26,3) (24,5) (23,5) (21,5) (20,6) (19,5) (18,5) (17,7)

(16,7) (15,6) (14,6) (14,5) (15,5) (16,3) (17,2) (17,0) (18,0) (18,2) (22,2) (22,0)

(23,0) (23,2) (24,2) (24,3) (23,5) **STOP**

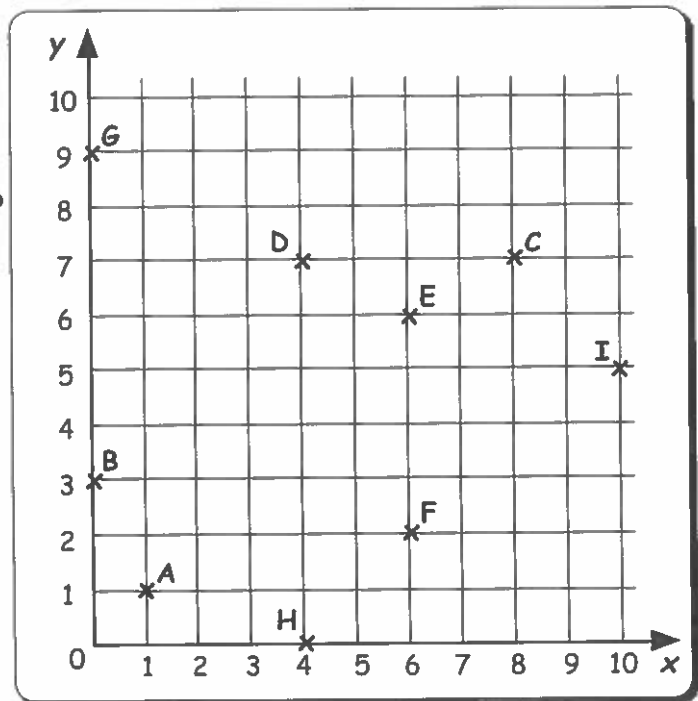


What have you drawn ?

Revision Exercise

1. Look at this coordinate grid.

- a Which point has coordinates $(6, 2)$?
- b What are the coordinates of B?
- c Which point lies on the x -axis?
- d Which point has the same x -coordinate as D?
- e Which points have the same x and y -coordinate?
- f Which points lie on the y -axis?
- g When 4 points are joined, a V shape kite is formed.
 - (i) Which 4 points?
 - (ii) Write down their coordinates.



2. Draw a 10 by 10 coordinate grid.

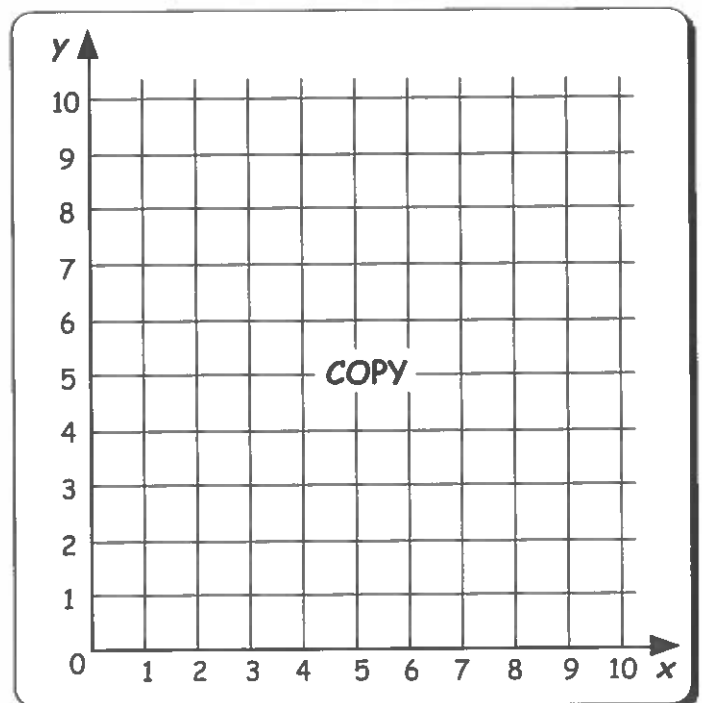
- a Plot the points $A(2, 5)$, $B(5, 8)$ and $C(9, 4)$.
- b D is a point to be put on the grid so that figure **ABCD** is a rectangle.

On your diagram plot point D and write down its coordinates.

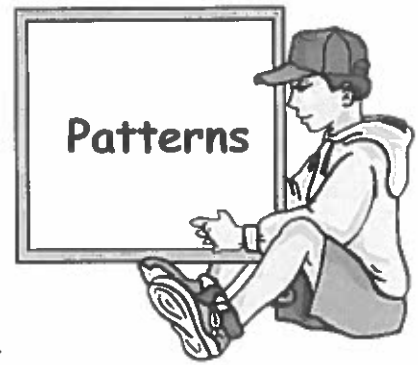
- c Join A to C and join B to D. You now have the two diagonals of the rectangle.

Write down the coordinates of the point where the two diagonals meet.

- d On your diagram, draw any lines of symmetry which your rectangle has.
- e How many lines of symmetry did you find?



CHAPTER 15



Exercise 1

1. Show the next two drawings in each of these patterns :-

a

b

c

2. Copy each pattern of letters and find the next letter/s in the pattern.

- | | | | |
|---|---------------------|---|-------------------------|
| a | C, E, G, I, K, ... | b | B, E, H, K, N, ... |
| c | U, T, S, R, Q, ... | d | ab, bc, cd, de, ... |
| e | za, yb, xc, wd, ... | f | pqr, prs, pst, ptu, ... |

Exercise 2

1. Describe each of the following sequences by saying :-

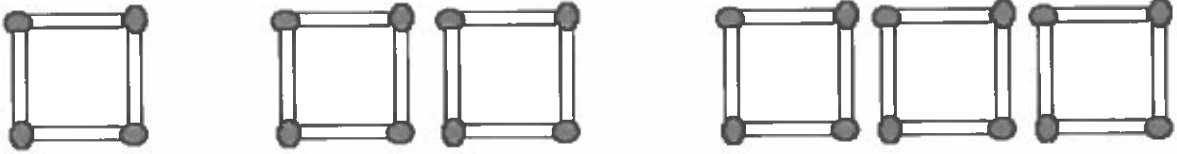
"Begin at the number "...." and go up (down) by "...." each time".

- | | | | |
|---|-----------------------------------|---|-----------------------------|
| a | 2, 5, 8, 11, 14, ... | b | 5, 9, 13, 17, 21, ... |
| c | 2, 8, 14, 20, 26, ... | d | 9, 19, 29, 39, 49, ... |
| e | 76, 81, 86, 91, 96, ... | f | 3, 4.5, 6, 7.5, 9, ... |
| g | 14, 16, ..., 20, 22, ..., 26, ... | h | 102, 99, 96, 93, ... |
| i | 83, 72, 61, 50, ... | j | 4300, 4100, 3900, 3700, ... |

2. Write down the next three numbers in this sequence :-

1, 5, 6, 11, 17, ..., ..., ...

3. Look at this pattern made with matches.



- Draw the pattern showing the matches needed for 4 squares.
- The pattern for the number of matches needed is 4, 8, 12,,
Copy this **sequence** and fill in the next 3 numbers.
- Copy the following and complete :-
"Start with 4 matches for 1 square and add ... matches for each extra square".
- How many matches will there be with 7 squares ?
- How many matchstick heads will there be with 7 squares ?
- If a matchstick head was also placed in the centre of each square, how many matchstick heads in total will there be with 10 squares ?

Exercise 3

- Write down the first eight **square** numbers.
- Which of these numbers are **square** numbers :-
81, 94, 98, 100, 110, 120, 121, 136, 144, 400, 1000, 1600 ?

3. Write down the first five **triangular** numbers.

4. What is the seventh **triangular** number ?

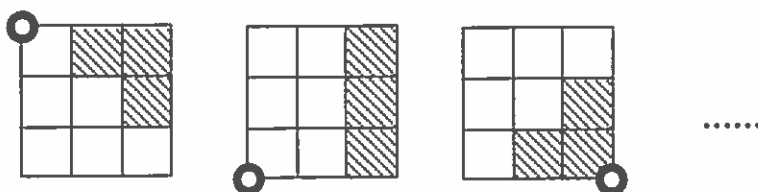


5. Which of these numbers are **triangular** numbers :-

4, 10, 20, 21, 28, 32, 36, 40, 44, 45, 50, 55 ?

Revision Exercise

1. a Copy the first 3 drawings in this pattern.



b Draw the 4th pattern.

2. a Very carefully, describe the following pattern :- 12, 19, 26, 33, 40, ...
 b Write the next 3 terms of the pattern.

3. a Describe this pattern in a similar way :- 92, 84, 76, 68, ...
 b Write the next 3 numbers in this pattern.

4. Describe each of the following number patterns carefully and write down the next three numbers each time :-

a 11, 16, 21, 26, 31, ...

b 1, 16, 31, 46, 61, ...

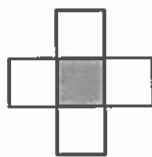
c 81, 74, 67, 60, ...

d 1·8, 3·1, 4·4, 5·7, 7·0, ...

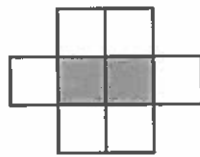
5. Find the next 3 letters in this pattern :-

A B C D F G H I K L

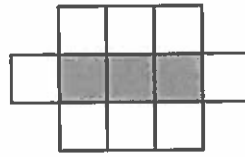
6. A tiler lays tiles using the following pattern :-



1 grey tile
4 white tiles



2 grey tiles
6 white tiles



3 grey tiles
... white tiles

.....

4 grey tiles
...

- a Draw (neatly) pattern numbers 4 and 5.

- b Copy and complete this table :-

Grey tiles	1	2	3	4	5	6
White tiles	4

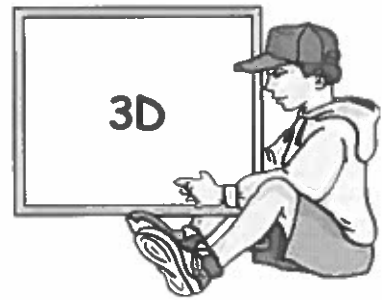


- c Describe carefully how the pattern is formed.
 d Use the description to find how many white tiles are needed if he uses 20 grey tiles.

7. Write down all the square numbers that lie between 45 and 85.

8. Write down all the even triangular numbers that lie between 8 and 40.

CHAPTER 16



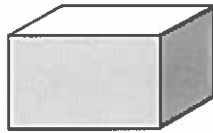
Exercise 1

1. Name the following mathematical shapes :-

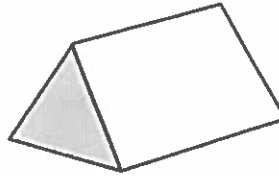
a



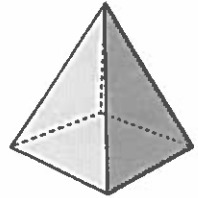
b



c



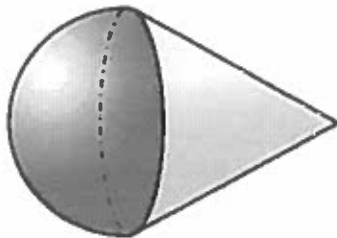
d



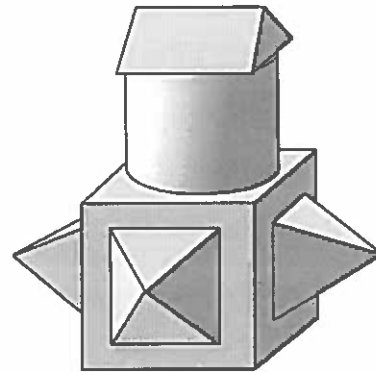
2. These objects are made up of more than one 3-dimensional shape.

List the different shapes :-

a

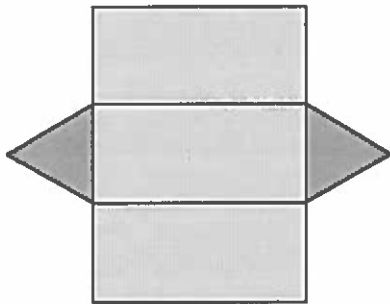


b

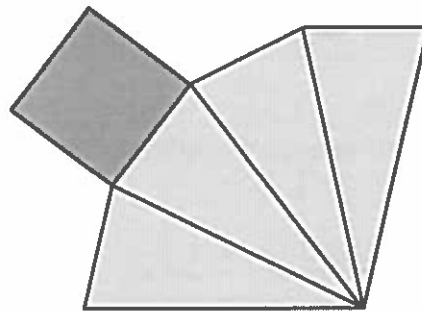


3. Which 3D figures do you get if you cut out the following shapes and fold them ?

a



b



4. How many edges has a :-

a cube

b triangular prism

c cylinder ?

5. How many faces has a :-

a cuboid

b square based pyramid

c sphere ?

6. How many vertices has a :-

a cube

b cone

c cylinder ?

Exercise 2

1. Name all the 3D mathematical shapes in each of these objects :-

a



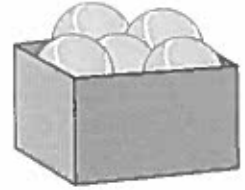
b



c



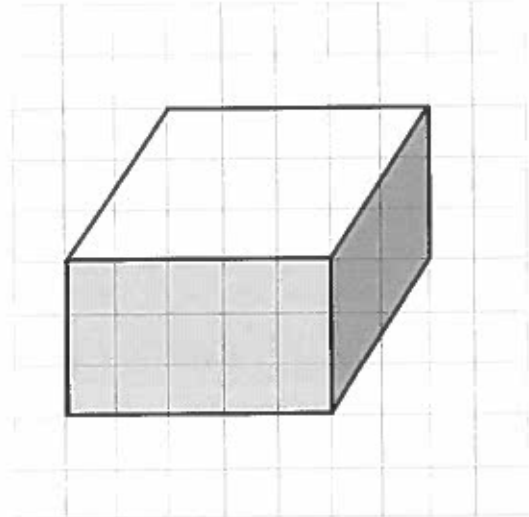
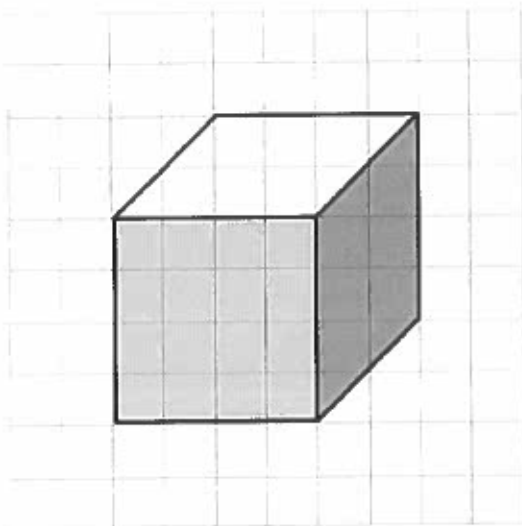
d



2. Make a list of as many objects as you can (at least 4) in your room or outside your house, which are in the shape of a :- a cuboid b cylinder.

Exercise 3

On squared paper, draw the cube and the cuboid.



Revision Exercise

(Question 5 will require a small piece of isometric paper).

1. Name the following mathematical shapes :-

a



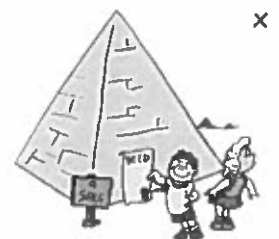
b



c



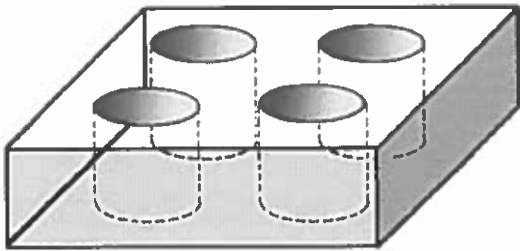
d



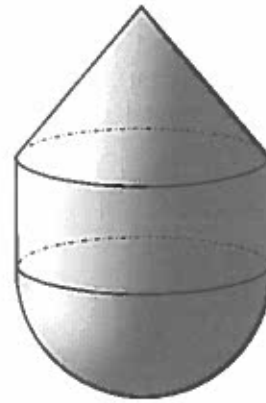
2. The two objects below are made up of more than one 3D shape.

List the different shapes :-

a



b



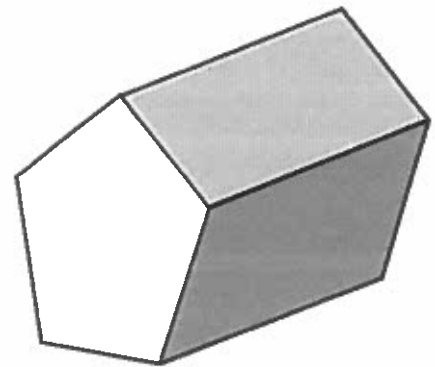
3. This shape is called a Pentagonal Prism.

a How many vertices does it have ?

b How many edges does it have ?

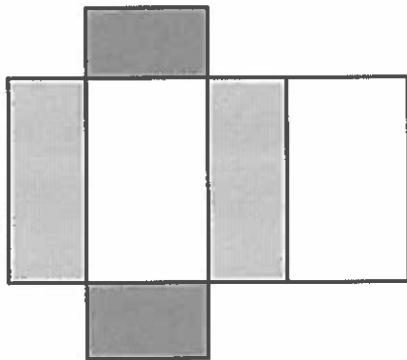
c Copy and complete this sentence :-

"This pentagonal prism consists of faces, two of them being a and the other are"

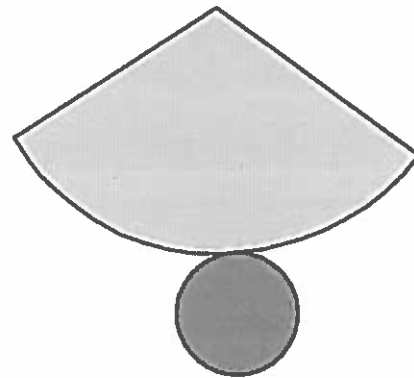


4. Which 3D figure would you get if you cut out each shape and folded it ?

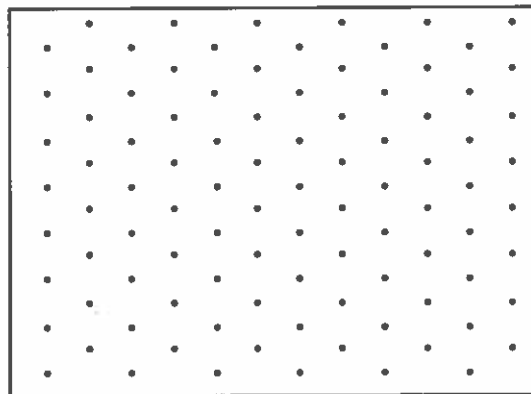
a



b

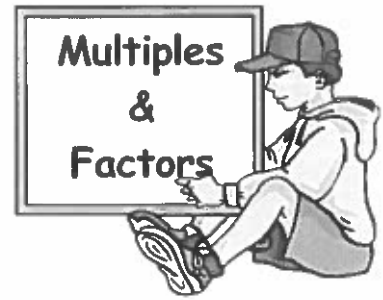


5. Use a piece of isometric (dotty) paper to draw a cuboid which is 5 boxes by 3 boxes by 3 boxes.



Dotty paper needed

CHAPTER 17



Exercise 1

- Write down the first ten multiples of 9, starting with 9, ...
- Write true or false for each statement :-
 - 23 is a multiple of 3
 - 54 is a multiple of 6
 - 49 is a multiple of 7
 - 106 is a multiple of 4
 - 9 is a multiple of 18
 - 300 is a multiple of 20
 - 110 is a multiple of 30
 - 480 is a multiple of 60.
- Find the lowest common multiple of the following sets of numbers :-
 - 6 and 9
 - 7 and 10
 - 9 and 18
 - 6 and 20
 - 2, 3 and 5
 - 2, 4 and 7
 - 3, 5 and 20
 - 2, 5 and 9.

Exercise 2

- Write down all the factors of these numbers :-
 - 8
 - 12
 - 31
 - 48.
- Write true or false for each statement :-
 - 4 is a factor of 36
 - 6 is a factor of 40
 - 7 is a factor of 63
 - 84 is a factor of 8
 - 9 is a factor of 81
 - 25 is a factor of 5
 - 30 is a factor of 720
 - 7 is a factor of 266.
- Find the highest common factor of the following sets of numbers :-
 - 8 and 10
 - 21 and 28
 - 24 and 30
 - 12 and 32
 - 8, 10 and 20
 - 7, 10 and 35
 - 24, 30 and 42
 - 100, 125 and 200.

Exercise 3

- Three pigs are to race round a farm track. Porky takes 6 minutes to run one lap, Parky takes 3 minutes and it takes Perky 5 minutes.



If all three pigs start the race at the same time, how many minutes will it take for the three pigs to be together at the starting point again ?

2. Val has swimming lessons every 2nd day, driving lessons every 4th day and tennis lessons once per week.
If she had all three lessons on July 2nd when is the next date that the three lessons fall on the same day ?

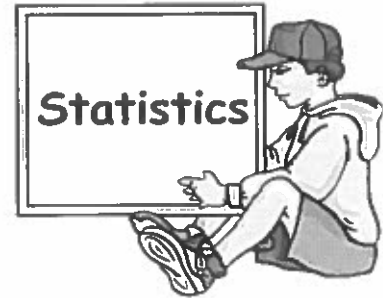


Revision Exercise

- Write down the first six multiples (excluding 0) of :-
a 4 b 8 c 15.
- Write down all the multiples of :-
a 6 between 29 and 55 b 11 between 32 and 89.
- What is the lowest common multiple (l.c.m.) of :-
a 6 and 10 b 4 and 9 c 9 and 21.
- What is the lowest common multiple (l.c.m.) of 3, 5 and 20.
- Write down all the factors of :-
a 9 b 30 c 96.
- What is the highest common factor (h.c.f.) of :-
a 20 and 28 b 25 and 125 c 32 and 56.
- What is the highest common factor (h.c.f.) of 24, 30 and 42.
- Shannon is making identical balloon arrangements for a party. She has 32 red balloons, 24 yellow balloons and 16 blue balloons. She wants each arrangement to have the same number of each colour.
What is the greatest number of arrangements that she can make if every balloon is used ?
- Two neon lights are turned on at the same time. One blinks every 4 seconds and the other blinks every 6 seconds.
In 60 seconds, how many times will they blink at the same time ?
- Lucy has £20 and Daisy has £35.
a Find the highest common factor of their money.
b Find the lowest common multiple of their money.

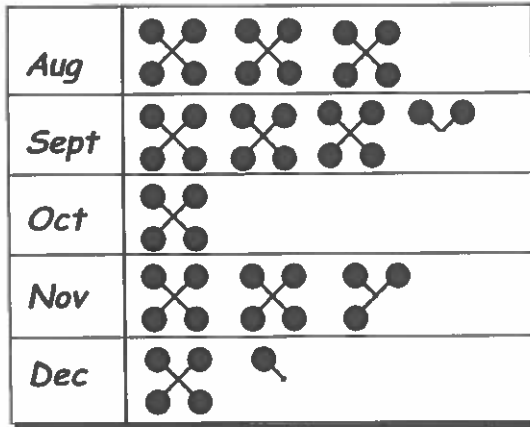


CHAPTER 18



Exercise 1

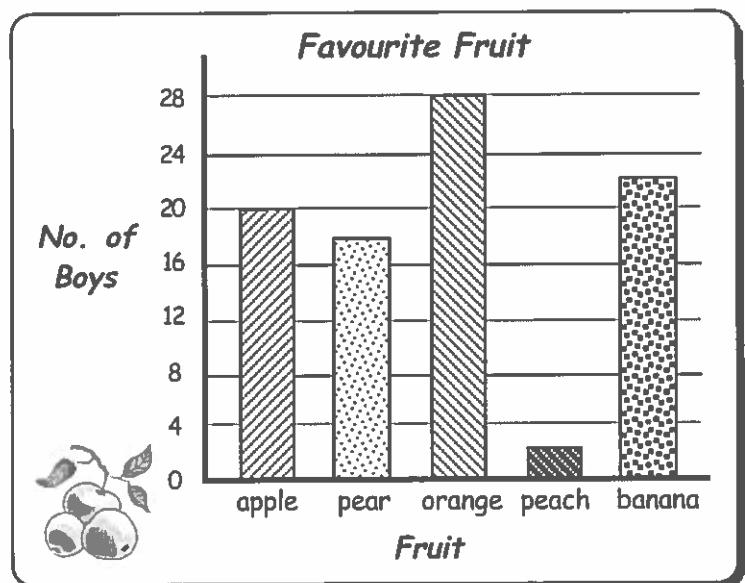
1. This pictograph shows the number of goals scored by a football team in the first five months of the season.



Key: stands for 4 goals.

- Write down how many goals were scored each month.
 - What was the team's worst month?
 - How many goals did the team score altogether from August to December?
2. A few boys were asked to name their favourite fruit. The results are shown in the bar graph below.

- How many boys chose :-
 - orange
 - apple
 - banana?
- How many fewer boys preferred peach to pear?
- How many more boys preferred banana to peach?
- How many boys took part in this survey?



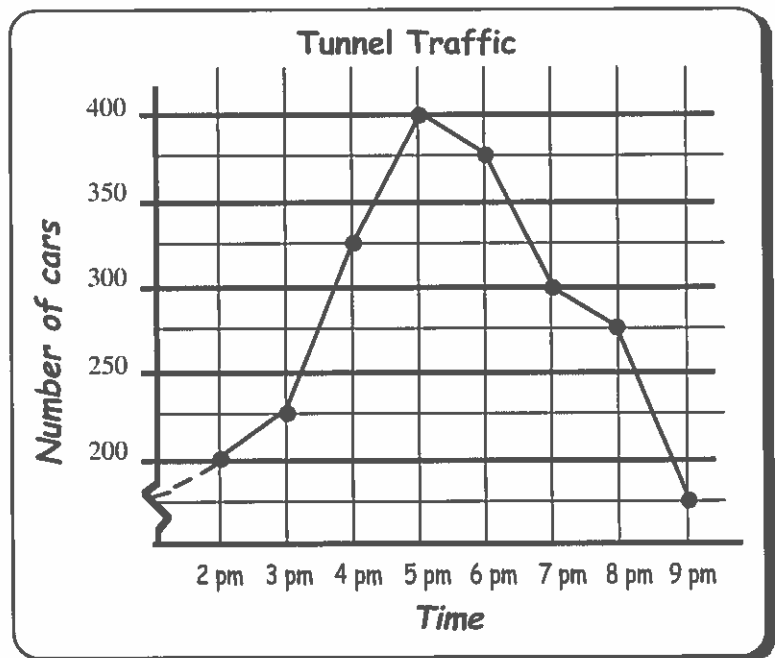
3. The line graph shows the number of cars per hour that were passing through the Clyde Tunnel one Monday afternoon.

a How many cars were passing through the tunnel at :-

- (i) 2 pm (ii) 4 pm
- (iii) 6 pm (iv) 8 pm
- (v) 7.30 pm ?

b At what time were there 225 cars per hour going through the tunnel ?

c At what times (approx.) were there 275 cars per hour going through the tunnel ?



d Between which two times was the biggest increase in traffic ?

e Between which two times was the biggest decrease in traffic ?

f Why do you think the traffic was busiest around 4.30 pm - 6 pm ?



4. A restaurant owner decides to introduce a "theme night" idea into his menus.

The cost for each theme meal is shown.

a How much will it cost for :-

- (i) one adult on a Monday Chinese Theme night ?
- (ii) one adult on a Sunday Indian Theme night ?
- (iii) three adults on a Saturday European Theme night ?

	Mon - Fri		Sat & Sun	
	Adult	Child	Adult	Child
<i>Chinese</i>	£20	£6	£23	£10
<i>Indian</i>	£21	£5	£25	£15
<i>European</i>	£25	£10	£28	£20

(iv) one adult and one child on a Sunday Chinese Theme night ?

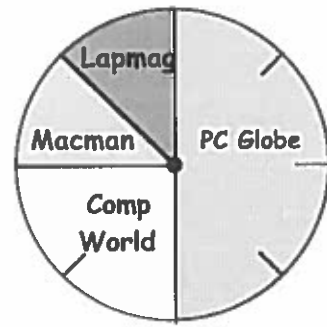
b Mr and Mrs Watson take their four children to an Indian Theme night on a Wednesday.

- (i) Work out the total cost for the family.
- (ii) How much did they save by not going there on a Saturday or Sunday ?



Exercise 2

1. A survey of computer magazine sales in a newsagents was made and the results are shown on the pie chart.



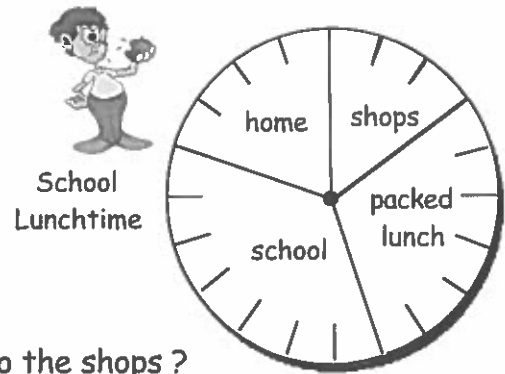
Magazine Sales



- a How many equal parts has the pie chart been split into ?
- b What fraction does each part stand for ?
- c What fraction represents Macman ?
- d Of the 400 people who took part in the survey, how many chose :-
 - (i) PC Globe
 - (ii) Comp World
 - (iii) Lapmag ?

2. 200 first year pupils were asked what they did for food at lunchtime.

The results are shown in this pie chart.



School Lunchtime

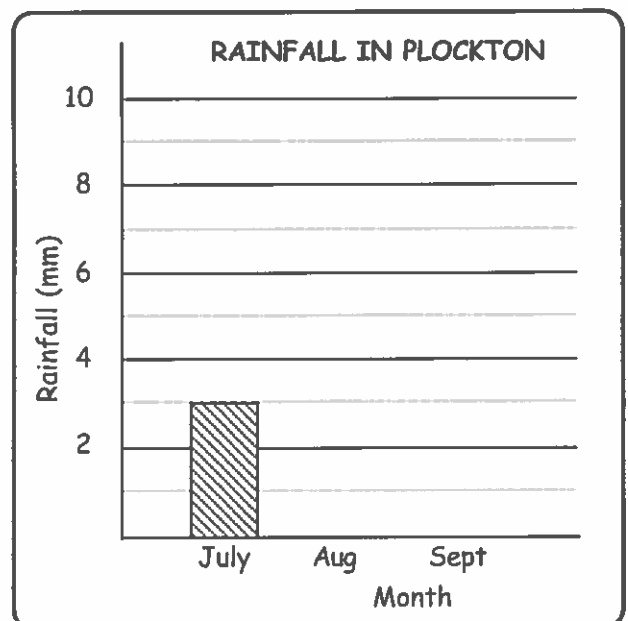
- a How many pupils went home for lunch ?
- b How many pupils took a packed lunch ?
- c How many pupils stayed in school ?
- d How many more went home rather than go to the shops ?

Exercise 3

1. The table shows the rainfall (in mm) from July to December in Plockton.

July	Aug	Sept	Oct	Nov	Dec
3	2	5	10	7.5	9

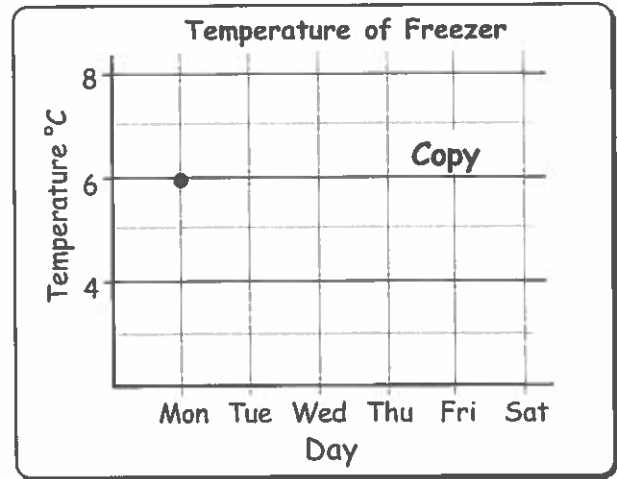
Copy and complete the bar graph using this information.



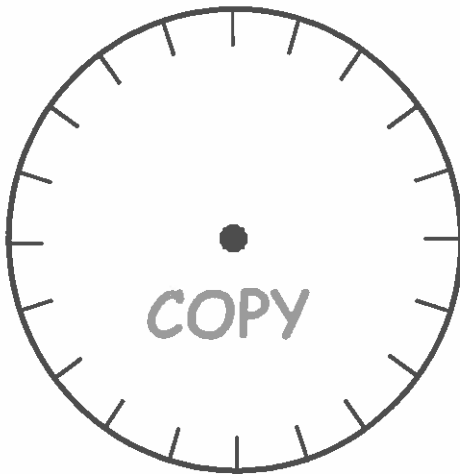
2. The temperature of a freezer, in °C, is recorded and shown in the table below.

Mon	Tue	Wed	Thu	Fri	Sat
6	7	4.5	8	10	8.5

Copy and complete the line graph to show this information.



- 3.



In a survey carried out in a baker's shop about "what do you like on a scone", it was found that :-

15% of those asked preferred "Cream".

45% of those asked preferred "Butter".

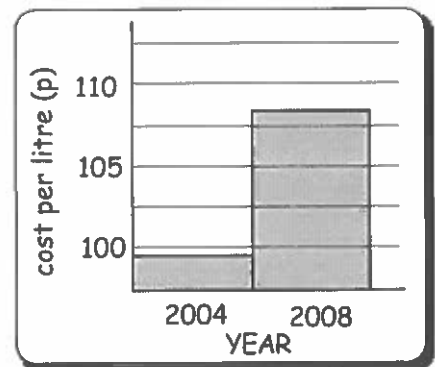
30% of those asked preferred "Jam".

10% of those asked preferred "Nothing".



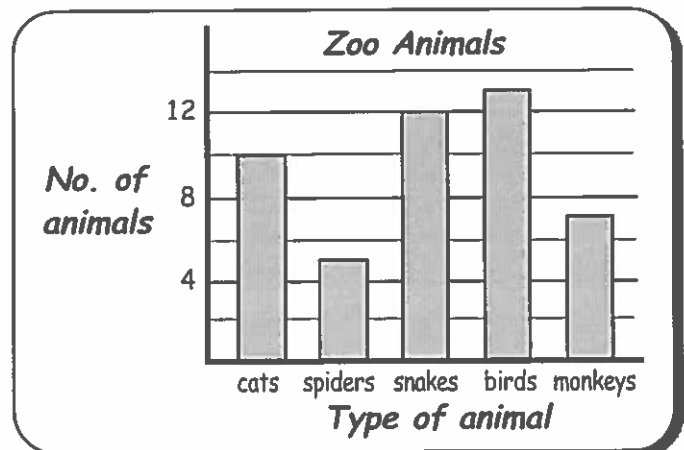
Copy or trace the blank pie chart and show the results of the survey.

4. This graph shows the average price of a litre of petrol in 2004 (99p) and 2008 (108p).
- Explain why the graph is misleading.
 - Draw a bar graph that gives a better picture of the comparison of prices in 2004 and 2008.



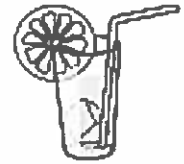
Revision Exercise

1. The bar graph shows the number of different animals at a local zoo.
- How many of each type of animal were in the zoo?
 - How many more birds than spiders were there?
 - How many animals were in the zoo altogether?



2. People were asked to name their favourite drink.

Orange	Water	Lemonade	Cola	Irn Bru
Water	Lemonade	Irn Bru	Orange	Orange
Orange	Water	Water	Water	Orange
Water	Irn Bru	Orange	Water	Cola
Water	Orange	Water	Irn Bru	Cola
Orange	Water	Cola	Water	Irn Bru



- With the use of tally marks, draw a frequency table to show this information.
- Now draw and label a neat bar graph to help represent this information.

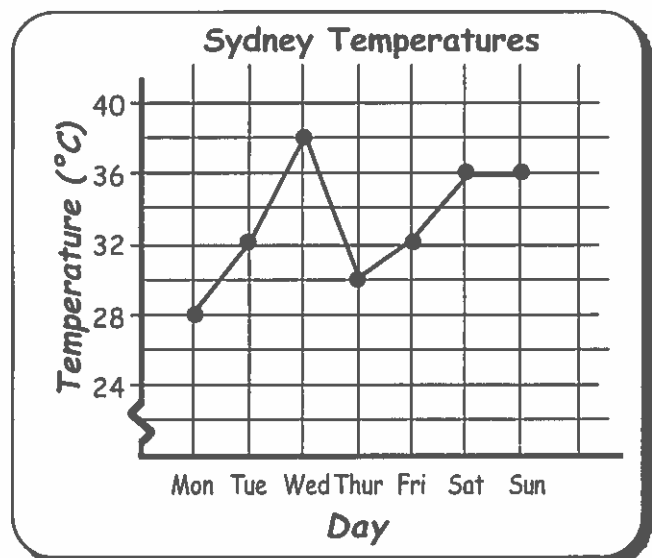
3. This Pie Chart, with 10 sectors, shows people's favourite type of film.

- What fraction prefer Romance ?
- What fraction represents :-
 - Comedy
 - Horror
 - Adventure ?
- If 300 people were asked in the survey, how many of them prefer :-
 - Romance
 - Comedy
 - Horror
 - Adventure ?



4. The line graph shows the temperature (in °C) in Sydney one week in February.

- Write down the temperature for each day.
- Which day was the warmest ?
- Which day was the coldest ?
- Between which two days was the greatest rise in temperature ?
- By how many degrees was the only fall in temperature ?
- On which days was the temperature :-
 - more than 34 °C
 - less than 32 °C ?



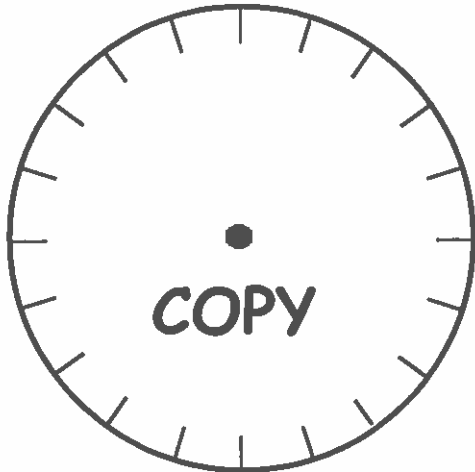
5. The table shows the number of vacuum cleaners sold by two electrical stores in Greenock over several months.

Month	July	Aug	Sept	Oct	Nov	Dec
Homeway	10	14	12	20	13	14
Inhouse	7	5	15	25	20	15



Show the information for Homeway and Inhouse on the same line graph.

6.



In a survey carried out in a corner shop about favourite types of soup, it was found that :-

- 30% of those asked preferred chicken
- 45% of those asked preferred pea/ham
- 10% of those asked preferred lentil
- the rest preferred tomato.

Copy or trace the blank pie chart and show the results of the survey.

7. Daily hotel prices in Paris are shown in the table.

- a How much would it cost for :-
- one single room in Hotel Rouge on 23rd June ?
 - one double room in Hotel Zidane on 12th August ?
 - Two double rooms on 16th May at the Hotel Metro ?

	May-June		July-Aug	
	Double	Single	Double	Single
<i>Hotel Rouge</i>	£95	£70	£100	£80
<i>Hotel Metro</i>	£80	£60	£90	£70
<i>Hotel Zidane</i>	£110	£90	£120	£95

- b John paid £240 for a three night stay in a single room.
In which hotel did he stay and in what period ?
- c Last June, six people booked 2 double and 2 single rooms in the Hotel Zidane for two nights.
- How much was the total cost of their stay ?
 - How much would they have saved if they had stayed at the Hotel Metro ?

