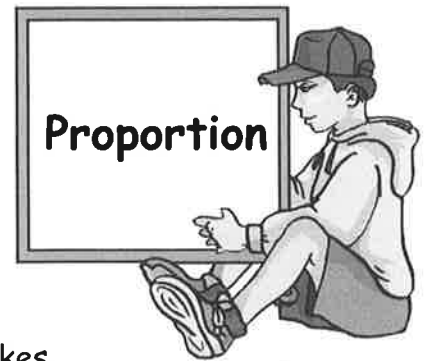


CHAPTER 10



Review 9

Ratio



1. In a cake shop window there are 17 tarts, 9 pies and 11 cakes.

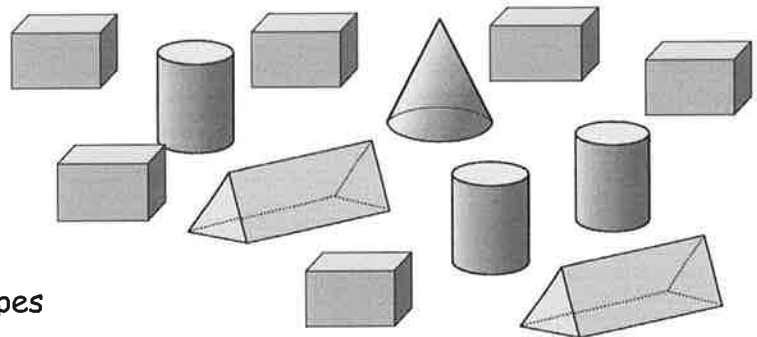
Write down the ratio of :-

- a tarts : pies b cakes : total number of items.



2. Write down each ratio in its **simplest form** :-

- a cylinders : cuboids
b cuboids : triangular prisms
c cones : cuboids
d cuboids : total number of shapes



3. Write each of these ratios in its **simplest form** :-

- a 1 centimetre : 1 metre b 1 minute : 1 hour c 20 minutes : 4 hours
d 20p : £5 e 5 days : days in June f 150 cm : 3 metres.

4. In a week Rhea earns £350, Maggie earns £400 and Vi earns £550.

Write down each of the following ratios of wages in their **simplest form** :-

- a Rhea : Vi b Maggie : total wages c Vi : Maggie : Rhea.

5. In a zoo, the ratio of cats to penguins is 3 : 7.

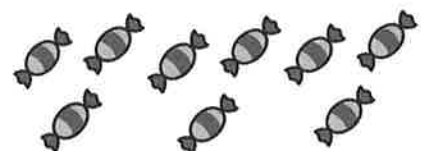
- a If there are 27 cats, how many penguins must there be ?
b If there are 42 penguins, how many cats are there ?



6. Mark is making a model plane to a scale of 1 : 40.

- a His model is 20 cm in height. What is the height of the **real** plane, in metres ?
b The real plane is 20 metres long. What length, in cm, should his **model** be ?

7. Share 35 sweets between Sara and Sue in the ratio of 3 : 2 so that Sara gets the larger share.



Exercise 1

Proportional Division






- Share £18 000 between Joanne and Paul in the ratio 2 : 7.
(Show all your working and remember to check your total comes to £18 000).
- Show all your working for each of the following :-
 - Share £44 000 between Rita and Rose in the ratio 3 : 8.
 - Share £3200 between Avril and Tam in the ratio 11 : 5.
 - Share two million pounds between Adam and Eve in the ratio 3 : 2.
- Each month Jo and Joy spend £20 on Lottery tickets.
Jo pays £4 and Joy pays £16.
 - Write the payment as a ratio in its simplest form.
 - Last week their ticket won £24 000.
How much money should each receive?
- Share £90 amongst Gran, Grandad and me in the ratio 1 : 2 : 3.
 - Share \$6000 amongst Jake, Jack and Joe in the ratio 3 : 7 : 10.



Exercise 2

Proportion

- The cost of 5 lemons is £1.50. Find the cost of one lemon. 
- Find the cost per item :-
 - 5 pencils costing 85p
 - 9 T-shirts costing £72
 - 7 CD's costing £84
 - 11 candles costing £22.55
 - 12 tiles costing £48.60
 - 10 mice costing £145.
-  A worm wriggles 240 metres in 4 hours.
Calculate its travel rate in metres per hour.
- Razz exchanges £30 for \$36. What is the rate of \$ per £.
- John bought 3 identical suits for a total of £96.
Tim bought two of these suits for £66.
Who got the better deal? Explain. 

Exercise 3

Direct Proportion



- The cost of 4 books is £48.80. Find the cost of 3 books.
- It takes a food mixer 2 minutes to puree 0.7 kg of fruit.
What weight of fruit could the mixer do in 5 minutes?
- 30 litres of car oil costs £135. Find the cost of 250 litres.
 - It takes 3 hours to iron 90 shirts. How long would it take to iron 20 shirts?
 - 400 ml of OJ concentrate costs £1.88. What would be the cost of one litre?
 - 25 metres of cord costs £37.50. How much would it cost for 24 metres?
- The time it takes to fill a water tank is directly proportional to its volume.
 - A tank 3 m by 2 m by 1 m takes 3 hours to fill.
How long would it take to fill a tank 4 m by 3 m by 2 m?
 - A swimming pool (50 m by 20 m by 4 m) takes 8 hours to fill.
How long would it take to fill a pool 40 m by 15 m by 3 m?



Exercise 4

Linear Graph of Direct Proportion

- Copy and complete this table.
 - Use an appropriate scale to plot the points (1, 3), (2, ...), etc.
 - Join the points with a straight line.
 - Does the line pass through the origin?

x	1	2	3	4
y	3	6	9	...

- Copy and complete this table for a bus travelling at 40 km/hr.
 - Using an appropriate scale for your axes, plot the points and draw a line through them.
 - What distance should the bus travel in :-
 - 8 hours
 - $6\frac{1}{2}$ hrs?

x	1	2	3	4
y	40	80

- Does this table indicate direct proportion?
Explain.

x	1	2	3	4
y	12	24	32	48

Revisit - Review - Revise 10



1. a One coffee costs £2.50. How much would it cost for 4 coffees ?
b One set of tyres costs £245. How much would it be for 3 sets ?

2. a Five garden gnomes cost £25.50.
What is the cost of one gnome ?



- b Nine packets of seeds costs £13.50.
How much would it cost for each packet ?

3. a Two keys cost £7. How much would three keys cost ?
b Eight chocolate bars cost £16.80. How much would five bars cost ?
c How much would six chairs cost, if five chairs cost £85 ?

4. a Which is the better deal when buying cup cakes ?



4 cupcakes
£1.08



6 cupcakes
£1.68

- b Explain why.

5. a Share £6000 in a ratio of 4 : 1. b Share 140 marbles in a 4 : 3 ratio.

6. Three friends won one £100 000 in the lottery.
Their winnings are to be split into the ratio 4 : 3 : 1.
How much will each person receive ?

7. a Copy and complete this table showing the distance travelled by a truck travelling at 60 km/hr.

Time (hrs)	1	2	3	4	5	6
Distance (km)	60	120

- b Using an appropriate scale for your axes, plot the points and draw a line through them.

- c How far will the truck travel in 11 hours ?

