

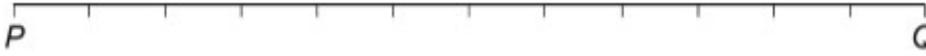
Solving ratio problems

- 1) Divide £600 in the ratio 9 : 6 : 5
£270, £180, £150
- 2) Archie and Ben share some money in the ratio 7:11. Ben gets £132. How much does Archie get?
£84
- 3) Jon and Nik share some money in the ratio 5 : 2
Jon gets £150 more than Nik.
How much money do they share altogether?
£350
- 4) To make a tough adhesive, Paul mixes 5 parts of resin with 2 parts hardener.
(a) Write down the ratio of resin to hardener.
(b) To fix a birdbath, Paul uses 9 g of hardener. How many grams of resin does he use?
(c) On another project, Paul uses 12 g of resin. How much hardener did he use?
(a) 5:2, (b) 22.5 g of resin, (c) 4.8 g of hardener
- 5) Ali, Beth and Clare take a test. The ratio of Ali's score to Beth's score is 5 : 3
Ali scored 10 more marks than Beth.
Clare scored 7 more marks than Ali.
Work out each of their scores.
25, 15, 32
- 6) Sandra has a piece of string 153 cm long.
She cuts the string into three lengths in the ratio 4:2:3
Work out the length, in centimetres, of each piece of string.
68:34:51
- 7) A scale model of Tower Bridge in London is 22 cm high. The real bridge is 66 m high.
(a) Work out the scale of the model. Write it as a ratio of real height to model height.
(b) The bridge is 243 m in real life. How long is the model?
(a) 300:1, (b) 81 cm
- 8) A supermarket car park has 200 spaces. 10% of the spaces are for staff.
The other spaces are for disabled people, for parents and for other customers in the ratio 1 : 2 : 7
Paul is going to paint a sign for each of the spaces for staff, for disabled people and for parents.
He is **not** going to paint signs for the spaces for other customers.
Work out the total number of spaces Paul is going to paint a sign for.
74
- 9) In a school, the ratio of the number of students to the number of computers is $1:\frac{3}{5}$. There are 210 computers in the school. How many students are there?
350 students
- 10) A petting zoo has rabbits, goats and llamas in the ratio 6 : 3 : 2. The zoo has 20 more rabbits than llamas. How many goats does it have?
15

- 11) CD and PQ are lines of length 12 cm
 (a) $CE : CD = 1 : 2$. Mark point E on the line with a cross.



- (b) $PR : RQ = 1 : 3$. Mark point R on the line with a cross.



(a) 6 squares along, (b) 3 squares along

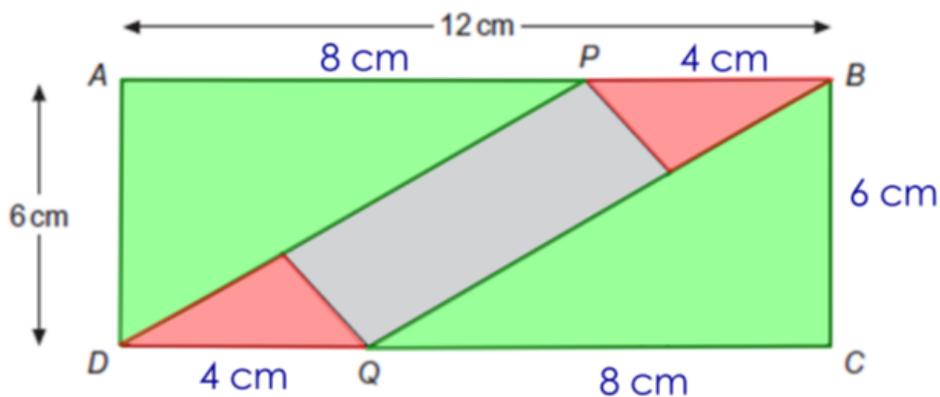
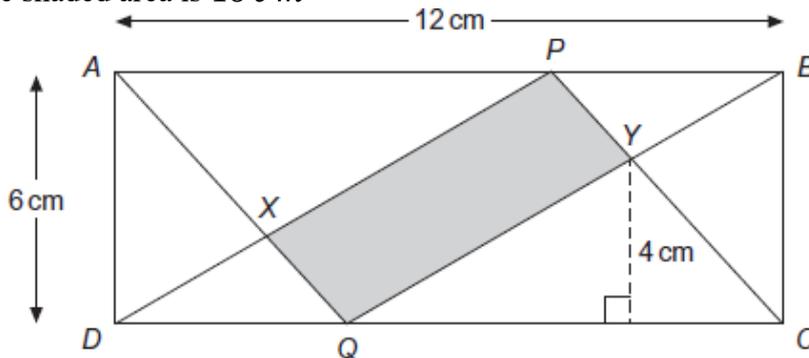
- 12) Three people share £180. Billy gets twice as much as Amy.
 Chloe gets three times as much as Billy.
 Is Chloe's share enough to buy a bike costing £115?
 You **must** show your working.

1:2:6, yes since £120 > £115

- 13) The perimeter of a right-angled triangle is 72 cm.
 The lengths of its sides are in the ratio 3 : 4 : 5
 Work out the area of the triangle.

$$\frac{18 \times 24}{2} = 216 \text{ cm}^2$$

- 14) $ABCD$ is a rectangle.
 P and Q are such that $AP : PB = CQ : QD = 2 : 1$
 Show that the shaded area is 16 cm^2



Green triangle = $\frac{6 \times 8}{2} = 24$

Red triangle = $\frac{4 \times 2}{2} = 4$

Total rectangle = $6 \times 12 = 72$

Shaded Area = $72 - (24 + 24 + 4 + 4) = 72 - 56 = 16 \text{ cm}^2$