

Solve ratio problems given the whole or a part

R



- 1** The ratio of men to women at a football match is 5 : 2
Decide whether each statement must be true, could be true or cannot be true.
Explain your reasoning.
- a) There are more men than women. _____

- b) There are 7 people at the football match. _____



- c) For every 2 women, there are 5 men. _____

- d) If one more woman arrives, the ratio will change to 5 : 3

- 2** A teacher orders pencils and rulers in the ratio 3 : 5
- a) One week, the teacher orders 240 pencils.
How many rulers does she order?
- b) The week after, the teacher orders 240 rulers.
How many pencils does she order?



- 3** For every 30 minutes that Huan spends watching TV, Whitney spends 2 hours.
If Huan watches TV for 4 hours, how long does Whitney watch TV for?

- 4** For every £1 Annie has, Tommy has 50p.
a) Tick the ratios that represent the situation.
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- 1 : 1

1 : 50

100 : 50

2 : 1

1 : 2
- For any incorrect ratios, discuss the mistake that has been made.

- b) If Annie has £3, how much money does Tommy have?
- c) If Tommy has £2.50, how much money does Annie have?
- d) If Annie has £4.00, how much money do they have altogether?
- e) If Tommy has £7.50, how much more money does Annie have than Tommy?



- 5 Eva gets £42 a month for her allowance.
Out of this, for every £5 she spends, she saves £1
a) Draw a bar model to represent this.



b) How much money does Eva save in a month?

c) How much money does Eva spend in a month?

- 6 Purple paint is made by mixing red and blue paint in the ratio 5 : 4
How much more red paint than blue paint is in 450 ml of the mixture?

- 7 The angles in a triangle are in the ratio 1 : 1 : 4
a) What type of triangle is it? How do you know?

b) What is the size of the largest angle in the triangle?

- 8 The mean of four numbers is 96
The numbers are in the ratio 1 : 7 : 3 : 5
Work out the range of the numbers. Show your workings.

9

$$\begin{aligned} x : y &= 4 : 9 \\ x + y &= 52 \end{aligned}$$

a) Work out the value of x .

b) Work out the value of y .

c) Use your answers to parts a) and b) to work out these values.

i) $y - x =$

iii) $x^2 + 3y =$

ii) $x - y =$

iv) $5x - 3y =$

