

Ratio Problems - Higher

For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **29**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1** $p:q = 3:5$
 p is what percentage of q ?
Circle your answer.

[1 mark]

37.5%

40%

60%

75%

- 2** Divide 84 in the ratio 5:7

[2 marks]

Answer _____ and _____

- 3** $a:b = 3:4$ and $b:c = 6:5$
Work out $a:c$ in its simplest form.

[2 marks]

Answer _____

- 4** A fruit punch is made from orange juice, mango juice and lemonade only.
 $\frac{3}{10}$ of the punch is lemonade.
The ratio of orange juice to mango juice is 2:5
What fraction of the punch is orange juice?

[3 marks]

Answer _____

- 5** In a car park, the ratio of electric cars to petrol cars is 3:8
There are 45 more petrol cars than electric cars.
 $\frac{1}{3}$ of the petrol cars are silver.
How many silver petrol cars are there?

[3 marks]

Answer _____

- 6** A garden is covered by grass, flower beds and vegetable beds only.
35% of the garden is grass.
40% of the garden is flower beds.
Write the ratio grass : flower beds : vegetable beds in its simplest form.

[2 marks]

Answer _____

- 7** Ciaran has three times as much money as Hana.
Ciaran gives Hana £24
They now have the same amount of money.
How much money did Ciaran have at the start?

[3 marks]

Answer £ _____

- 8** Nia, Olu and Pip share some money in the ratio 2:3:5
Pip gets £84 more than Nia.
Nia saves $\frac{1}{4}$ of her share.
Olu saves $\frac{1}{3}$ of his share.
How much money do Nia and Olu save altogether?

[4 marks]

Answer £ _____

- 9** Concrete is made from cement, sand and gravel in the ratio 1:2:4 by mass.
Jo has 20 kg of cement, 50 kg of sand and 100 kg of gravel.
What is the greatest mass of concrete she can make?

[3 marks]

Answer _____ kg

- 10** The ratio of boys to girls in a club is 5:3
6 boys leave and 6 girls join.
The ratio of boys to girls is now 1:1
How many people are in the club?

[4 marks]

Answer _____

- 11** Bag A contains red and blue counters in the ratio $1:3$
Bag B contains red and blue counters in the ratio $3:1$
All the counters from both bags are put into an empty bag C .
Jo says,
‘The ratio of red to blue counters in bag C will be $1:1$ ’
Is Jo’s statement always true, sometimes true or never true?
Tick one box.
Show working to support your answer.

[2 marks]

☐ Always true

☐ Sometimes true

☐ Never true
