

GCSE Maths: Ratio problems: one part known, differences and combining ratios (Higher): worksheet

GCSE Maths - Ratio and Proportion - Higher - Lesson 15.4

Name: _____

Date: _____

Score: _____

15 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch15-ratio-proportion/higher/ratio-problems-one-part-known-differences-and-combining/

Exercise 15D Ratio problems

Non-calculator

1 Work out the missing amount in each case.

(a) The ratio of red to blue is 2 : 3. There are 10 red. How many blue?

Answer: _____

(b) The ratio of boys to girls is 3 : 4. There are 20 girls. How many boys?

Answer: _____

(c) Sam and Tia share money in the ratio 5 : 2. Sam gets £35. How much does Tia get?

Answer: _____

(d)

The ratio of fiction to non-fiction books is 1 : 6. There are 42 non-fiction books. How many fiction books?

Answer: _____

(e) The ratio of cats to dogs is 4 : 9. There are 28 cats. How many dogs?

Answer: _____

(f) The ratio of tea bags to coffee bags is 7 : 5. There are 45 coffee bags. How many tea bags?

Answer: _____

2 A bag has red and blue counters in the ratio 3 : 5. There are 15 red counters. How many counters are in the bag altogether?

Answer: _____

3 White and blue paint are mixed in the ratio 4 : 3. There are 24 litres of white paint. Work out how much blue paint there is, and the total amount of paint.

Answer: _____

4 The difference between two shares is given. Work out the share asked for.

(a) Shares in the ratio 5 : 2. The bigger share is £12 more than the smaller share. Find the bigger share.

Answer: _____

(b) Shares in the ratio 7 : 3. The bigger share is 20 kg more than the smaller. Find the smaller share.

Answer: _____

(c) Shares in the ratio 9 : 5. The difference is 28 m. Find the total.

Answer: _____

- 5** Chris and Dan share money in the ratio 5 : 2. Chris gets £18 more than Dan. How much money is shared altogether?

Answer:

- 6** Combine the ratios to write A : B : C.

(a) $A : B = 1 : 2$ and $B : C = 3 : 4$

Answer:

(b) $A : B = 2 : 3$ and $B : C = 3 : 5$

Answer:

(c) $A : B = 4 : 5$ and $B : C = 10 : 7$

Answer:

(d) $A : B = 3 : 4$ and $B : C = 6 : 5$

Answer:

- 7** In a fruit bowl the ratio of apples to pears is 2 : 3 and the ratio of pears to bananas is 6 : 5. There are 75 pieces of fruit altogether. How many bananas are there?

Answer:

- 8** Red, green and blue counters are in the ratio 2 : 3 : 7. There are 21 green counters. How many counters are there altogether?

Answer:

- 9** The ratio of Amy's money to Ben's money is 2 : 3. The ratio of Ben's money to Cat's money is 5 : 4. Cat has £48. How much do Amy and Ben have?

Answer:

- 10** Eve and Fay share money in the ratio 8 : 3. Eve gets £35 more than Fay. How much does each person get?

Answer:

- 11** In a choir the ratio of sopranos to altos is 5 : 3. There are 6 more sopranos than altos. How many sopranos, altos and singers are there altogether?

Answer:

- 12** $x : y = 3 : 4$ and $y : z = 2 : 5$. When $z = 30$, work out the value of x .

Answer:

- 13** Jo says: "The ratio of cats to dogs is 2 : 3, so there are 5 more dogs than cats." Explain why Jo cannot be sure that this is right.

Answer:

- 14** Ben writes: " $A : B = 2 : 3$ and $B : C = 4 : 5$, so $A : B : C = 2 : 3 : 5$." Explain his mistake and write the correct ratio A : B : C.

Answer:

- 15** $A : B = 2 : 3$ and $B : C = 4 : 5$. The sum of A and C is 46. Work out the value of B.

Answer: