

GCSE Maths: Ratio problems: one part known, differences and combining ratios (Foundation): answers

GCSE Maths - Ratio and Proportion - Foundation - Lesson 15.4

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch15-ratio-proportion/foundation/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: 15

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

Answer: 15

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

Answer: £14

- (d)

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

Answer: 7

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

Answer: 63

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

Answer: 63

2 Red and blue counters are in the ratio 1 : 2. There are 6 red counters. How many blue counters are there?

Answer: 12

3 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: 40

4 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: Blue 18 litres and total 42 litres

5 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: £20

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

Answer: 15 kg

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

Answer: 98 m

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

Answer: £42

- 7 Combine the ratios to write A : B : C.

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

Answer: 3 : 6 : 8

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

Answer: 2 : 3 : 5

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

Answer: 8 : 10 : 7

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

Answer: 9 : 12 : 10

- 8 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: 25

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

Answer: 84

- 10 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: Amy £40, Ben £60

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

Answer: Eve £56 and Fay £21

- 12 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: Sopranos 15, Altos 9 and total 24

- 13 $x : y = 3 : 4$ and $y : z = 2 : 5$. When $z = 30$, work out the value of x .

Answer: 9

- 14 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: The difference depends on the actual numbers, not only on the ratio

- 15** 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: $8 : 12 : 15$

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

Answer: 24