RATIO: WHEN ONE PART IS KNOWN

BUILDING BLOCKS

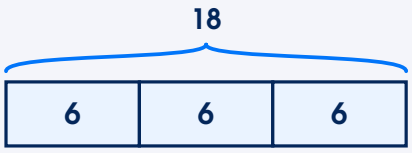
NAME _____ CLASS _____ DATE _____

KEY IDEA

If you know what 1 part is worth, multiply to find more parts.

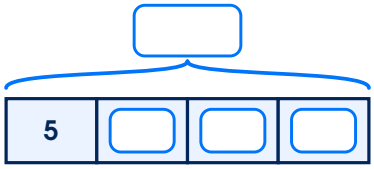
1 part = 6

3 parts = 3 × 6 = 18

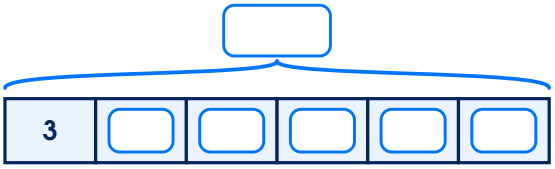


1 The first part is shown. Fill in the other parts and the total.

a)



b)



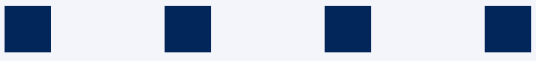
2 Two parts together are worth 10.



a) One part is worth ☐

b) All 4 parts are worth ☐

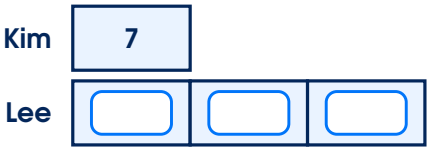
3 For every 1 square there are 3 circles. Here are 4 squares. Draw the circles.



Draw the circles here.

How many circles are there in total? ☐

4 Kim and Lee share some sweets in the ratio 1 : 3. Kim gets 7 sweets.



a) How many sweets does Lee get? ☐

b) How many altogether? ☐

RATIO: WHEN ONE PART IS KNOWN

SUPPORT

NAME _____ CLASS _____ DATE _____

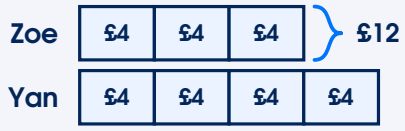
KEY IDEA

Zoe and Yan share money in the ratio 3 : 4. Zoe gets £12.

3 parts = £12

1 part = £12 ÷ 3 = £4

Yan: 4 × £4 = £16



1 Isla and Jack share some sweets in the ratio 2 : 3. Isla gets 14 sweets.

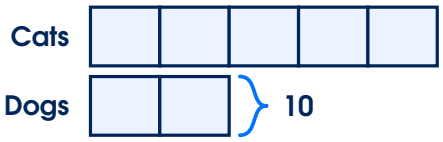


a) One part is worth ____

b) Jack gets ____

c) Total number of sweets ____

2 The ratio of cats to dogs at a rescue centre is 5 : 2. There are 10 dogs.



a) One part is worth ____

b) Number of cats ____

c) Total number of pets ____

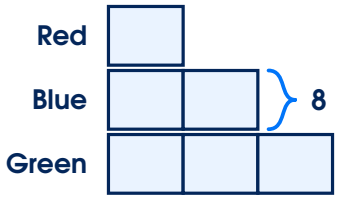
3 Juice and lemonade are mixed in the ratio 1 : 4. Ella uses 300 ml of juice.

Draw your bar model here.

Lemonade = ____ ml

Total drink = ____ ml

4 Red, blue and green cubes are in the ratio 1 : 2 : 3. There are 8 blue cubes.



Red cubes ____

Green cubes ____

Total cubes ____

RATIO: WHEN ONE PART IS KNOWN

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

When one part is given, label it on the correct bar. Divide by the number of parts it stands for to find one part, then multiply. Do not add the parts of the ratio unless the whole is given.

FLUENCY

1 Answer each question.

a) In the ratio 4 : 7, the smaller part is 32. Find the larger part. ☐

b) In the ratio 5 : 9, the larger part is 45. Find the smaller part. ☐

c) In the ratio 3 : 8, the first part is 4.5. Find the second part. ☐

d) In the ratio 2 : 3, the second part is 51. Find the total. ☐

2 A cake uses flour and sugar in the ratio 5 : 2. It uses 350 g of flour.

a) Mass of sugar (g) ☐ **b)** Total mass (g) ☐

c) Another cake uses 90 g of sugar. How much flour does it use? ☐

REASONING

3 Find the smaller part in each problem.

A Share 36 in the ratio 1 : 3. Smaller part: ☐

B In the ratio 1 : 3, the larger part is 36. Smaller part: ☐

Why are the answers different? .....

4 The ratio of boys to girls in a club is 4 : 5. There are 20 girls. Zak says,

4 + 5 = 9 and 20 ÷ 9 is not a whole number, so there must be a mistake.

Explain why Zak is wrong. .....

How many boys are in the club? ☐

RATIO: WHEN ONE PART IS KNOWN

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 True or false? Circle your answer.

Correct any statement that is false.

a) a : b = 3 : 5 and a = 12, so b = 20 TRUE FALSE

b) x : y = 2 : 7 and y = 21, so x = 7 TRUE FALSE

c) p : q = 4 : 1 and q = 2.5, so p = 10 TRUE FALSE

d) m : n = 5 : 2 and n = 8, so m – n = 12 TRUE FALSE

PROBLEM SOLVING

2 At a show, the ratio of adults to children is 2 : 9. There are 126 children.

a) How many adults are at the show? ☐

Adult tickets cost £8 and child tickets cost £5.

b) How much money is taken from ticket sales? £ ☐

3 In a bag, red : blue = 3 : 5 and blue : green = 2 : 3. There are 30 green counters.

a) Number of red counters ☐ **b)** Total number of counters ☐

★ CHALLENGE FOR ALL

4 The ratio of Mia's age to her dad's age is 2 : 7. Mia is 12 years old.

a) How old is Mia's dad? ☐

b) In how many years will the ratio of their ages be 1 : 2? ☐

c) Will the ratio of their ages ever be 1 : 1? Explain.

.....

STEP 3 ANSWERS – RATIO: WHEN ONE PART IS KNOWN

ANSWERS

BUILDING BLOCKS

1 a) 5, 5, 5 in the parts; total 20 · b) 3 in every part; total 18
2 a) 5 · b) 20
3 4 groups of 3 circles drawn · 12 circles
4 a) Lee gets 21 (7 in each part) · b) 28 sweets

SUPPORT

1 a) 7 · b) Jack gets 21 · c) 35 sweets
2 a) 5 · b) 25 cats · c) 35 pets
3 Lemonade = 1200 ml · Total drink = 1500 ml
4 One part = 4 · Red 4 · Green 12 · Total 24

CORE

1 a) 56 · b) 25 · c) 12 · d) 85
2 a) 140 g · b) 490 g · c) 225 g
3 A: 9 · B: 12. In A, 36 is the whole (4 parts); in B, 36 is only the larger part (3 parts), so one part is worth more.
4 20 girls is 5 parts (the girls' part, not the whole), so 1 part = 4. Zak should not divide by 9. There are 16 boys.

GREATER DEPTH

1 a) True · b) False – x = 6 · c) True · d) True (m = 20)
2 a) 28 adults · b) £854 (28 × £8 = £224, 126 × £5 = £630)
3 Blue = 20, so a) 12 red · b) 62 counters
4 a) 42 · b) 18 years (Mia 30, Dad 60) · c) No – the age gap is always 30 years, so their ages can never be equal.