

Name _____

Date _____

Stage 7 End-of-unit test 12 — mark scheme

20 questions · 45 marks · calculators are not allowed · allow about 45 minutes

- 1 Write the ratio 12 : 18 in its simplest form. [2]

Answer: 2 : 3

The HCF is 6.

- 2 Write the ratio 45 : 60 : 75 in its simplest form. [2]

Answer: 3 : 4 : 5

The HCF of all three is 15.

- 3 The ratio 3 : 5 is equivalent to 21 : n. What is n? [2]

Answer: 35 $3 \times 7 = 21$, so $n = 35$.

- 4 Write 40 cm : 1 m as a ratio in its simplest form. [3]

Answer: 2 : 5Same units first: $40 : 100 = 2 : 5$.

- 5 In the ratio 2 : 3, what fraction of the whole is the first part? [2]

☐ $\frac{2}{3}$ ☐ $\frac{2}{5}$ ☐ $\frac{3}{5}$ ☐ $\frac{1}{2}$ **Answer: 2/5**

5 parts altogether, and 2 of them.

- 6 Does the order of a ratio matter? [1]

☐ No☐ Yes — 3 : 2 is not the same as 2 : 3☐ Only for big numbers☐ Only in words**Answer: Yes — 3 : 2 is not the same as 2 : 3**

The first number belongs to the first thing named.

- 7 Share 20 in the ratio 2 : 3. What is the larger share? [2]

Answer: 125 parts, one part is 4, and $3 \times 4 = 12$.

- 8 Share \$150 in the ratio 2 : 3 : 5. What is the largest share, in dollars? [3]

Answer: 7510 parts of 15; $5 \times 15 = 75$.

9 What is the first step when sharing in a ratio? [1]

- ☐ Divide by the first number
- ☐ Add the parts
- ☐ Multiply the parts
- ☐ Subtract them

Answer: Add the parts

That gives the number of equal parts.

10 How do you check a share is right? [2]

- ☐ You cannot
- ☐ Add the shares and compare with the total
- ☐ Divide them
- ☐ Look at the ratio

Answer: Add the shares and compare with the total

They must give back the original total.

11 Two people share money in the ratio 3 : 5. The smaller share is \$27. What is the total, in dollars? [3]

Answer: 72

One part is 9, and 8 parts make 72.

12 Two shares are in the ratio 5 : 3 and differ by 16. What is the larger share? [3]

Answer: 40

The difference is 2 parts, so one part is 8; $5 \times 8 = 40$.

13 5 pens cost \$35. What do 8 pens cost, in dollars? [2]

Answer: 56

One pen is \$7, and $7 \times 8 = 56$.

14 A car uses 12 litres for 96 km. How far on 20 litres, in km? [3]

Answer: 160

8 km per litre, and $8 \times 20 = 160$.

15 What does directly proportional mean? [2]

- ☐ One goes up as the other goes down
- ☐ When one doubles so does the other
- ☐ They are equal
- ☐ They add to a fixed total

Answer: When one doubles so does the other

The ratio between them is constant.

16 A graph of two directly proportional quantities is ... [2]

- ☐ a curve
- ☐ a straight line through the origin
- ☐ horizontal
- ☐ a line missing the origin

Answer: a straight line through the origin

Zero of one gives zero of the other.

- 17** Is a taxi fare directly proportional to the distance? [2]

☐ Yes

☐ No

Answer: No

The fixed charge means zero distance still costs something.

- 18** A recipe for 4 people uses 300 g of rice. How much for 10 people, in grams? [3]

Answer: 750

75 g each, and $75 \times 10 = 750$.

- 19** A class of 30 has boys and girls in the ratio 2 : 3. How many girls? [3]

Answer: 18

5 parts of 6; $3 \times 6 = 18$.

- 20** Paint mixes red and white in the ratio 2 : 5. For 6 litres of red, how much white, in litres? [2]

Answer: 15

$6 \div 2 = 3$, and $5 \times 3 = 15$.

Total: 45 marks