

WA7MNAUN9

Understanding number

Core + Challenge

Introducing Ratios — Marking Key

I can use ratios and fractions to compare quantities, simplify ratios and find equivalent ratios.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

Section A Fluency: 16 Section B Core: 21 Section C Reasoning: 9 Section D Challenge: 10 **Total: 56**

Fluency: 1 mark each; accept an equivalent unsimplified answer for half credit at tutor's discretion.

A

Fluency *answers and working*

/ 16 marks

Q	Answer	Working
1	2 : 3	divide by the HCF → 2 : 3
2	2 : 5	divide by the HCF → 2 : 5
3	2 : 3	divide by the HCF → 2 : 3
4	3 : 4	divide by the HCF → 3 : 4
5	5 : 2	divide by the HCF → 5 : 2
6	3 : 4	divide by the HCF → 3 : 4
7	2 : 5 : 3	divide by the HCF → 2 : 5 : 3
8	1 : 4	divide by the HCF → 1 : 4
9	3 : 2	divide by the HCF → 3 : 2
10	3 : 2	divide by the HCF → 3 : 2
11	1 : 4	divide by the HCF → 1 : 4
12	1 : 400	divide by the HCF → 1 : 400
13	1 : 2	divide by the HCF → 1 : 2
14	20	× 4
15	12	× 3
16	7	÷ 5

B

Core *answers, working and marks*

/ 21 marks

Q	Answer	Working / sample response	Marks
1	(a) 2 : 3 (b) 2 : 5 (c) $\frac{3}{5}$	4 : 6; 4 : 10; $\frac{6}{10}$ 1 mark each	3
2	3 : 4; $\frac{3}{7}$	12 : 16 = 3 : 4; $\frac{12}{28} = \frac{3}{7}$ 1 mark each	2
3	1000 mL; 1.25 L	$250 \times 4 = 1000$ 1 mark each	2
4	450 g	$300 \div 4 \times 6 = 450$ 1 mark: working 1 mark: 450 g	2
5	Cheese A	A: \$37.50 per kg < \$42 per kg 1 mark: same units 1 mark: A	2
6	2 km	$4 \times 50\,000 = 200\,000\text{ cm} = 2\text{ km}$ 1 mark: 200 000 cm 1 mark: 2 km	2
7	Ali \$380, Ben \$190	3 parts: $570 \div 3 = 190$ 1 mark: one part 1 mark: both shares	2
8	35 kg	$14 \div 2 = 7$ per part; $5 \times 7 = 35$ 1 mark each	2
9	13	$312 \div 24 = 13$ 1 mark: working 1 mark: 13	2
10	9 : 6 yes; 10 : 8 no	$9 : 6 = 3 : 2$; $10 : 8 = 5 : 4$ 1 mark each	2

C

Reasoning *sample answers and marking criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	Order matters	2 cups flour : 3 cups sugar is a different recipe from 3 flour : 2 sugar. 2 marks	2
2	$\frac{2}{5}$	The ratio compares part to part. The whole has $2 + 3 = 5$ parts, and 2 of them are red. 1 mark: part:part 1 mark: 5 parts 1 mark: $\frac{2}{5}$	3

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Q	Answer	Working / sample response	Marks
3	No – 2 : 3	6 and 9 still share a factor of 3. Dividing by the HCF 6 gives 2 : 3. <i>1 mark each</i>	2
4	1 : 4	Units must match: 50 cm : 200 cm = 1 : 4. <i>1 mark: units</i> <i>1 mark: 1 : 4</i>	2

D

Challenge *solutions and marking criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	9	$26 \div 3 = 8.67$; round up so every child is supervised. <i>1 mark: 8.67</i> <i>1 mark: 9 with reason</i>	2
2	48	The difference is 2 parts = 12, so 1 part = 6 Total 8 parts = 48 <i>1 mark: 2 parts = 12</i> <i>1 mark: part = 6</i> <i>1 mark: 48</i>	3
3	8 : 12 : 15	Make b the same: $2 : 3 = 8 : 12$ and $4 : 5 = 12 : 15$ <i>1 mark: common b</i> <i>1 mark: both scaled</i> <i>1 mark: 8 : 12 : 15</i>	3
4	3 : 5	Water fraction: $(\frac{1}{4} + \frac{1}{2}) \div 2 = \frac{3}{8}$, so 3 : 5 <i>1 mark: $\frac{3}{8}$</i> <i>1 mark: 3 : 5</i>	2