

WA7MNAC6

Calculating with number

Core + Challenge

Dividing Decimals — Marking Key

I can divide decimals by whole numbers and by decimals, and interpret the answer in context.

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: 22 Section C Reasoning: 9 Section D Challenge: 10 **Total: 57**

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	2.1	$84 \div 4 = 21 \rightarrow 2.1$
2	0.045	halve three times: 0.18, 0.09, 0.045
3	8	$64 \div 8 = 8$
4	7	$35 \div 5 = 7$
5	30	$120 \div 4 = 30$
6	0.8	$7.2 \div 9 = 0.8$
7	0.456	move 2 places $\rightarrow 0.456$
8	40	$240 \div 6 = 40$
9	8	$96 \div 12 = 8$
10	0.25	$0.5 \div 2 = 0.25$
11	3.15	$15.75 \div 5 = 3.15$
12	60	$180 \div 3 = 60$
13	28	4 quarters in 1, so $7 \times 4 = 28$
14	0.12	$0.84 \div 7 = 0.12$
15	13.7	$27.4 \div 2 = 13.7$
16	30	$450 \div 15 = 30$

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B

Core answers, working and marks

/ 22 marks

Q	Answer	Working / sample response	Marks
1	\$3.15	$12.60 \div 4 = 3.15$ 1 mark: working 1 mark: \$3.15	2
2	8	$24 \div 3 = 8$ 1 mark: working 1 mark: 8	2
3	13.5 km/L	$364.5 \div 27 = 13.5$ 1 mark: working 1 mark: 13.5	2
4	A \$5.20/kg, B \$4.95/kg – Brand B	$6.50 \div 1.25 = 5.20$; $9.90 \div 2 = 4.95$ 1 mark each unit price 1 mark: Brand B	3
5	6	$1.5 \div 0.25 = 150 \div 25 = 6$ 1 mark: working 1 mark: 6	2
6	4.5 m	$12.6 \div 2.8 = 126 \div 28 = 4.5$ 1 mark: working 1 mark: 4.5 m	2
7	20 minutes	$9 \div 0.45 = 900 \div 45 = 20$ 1 mark: working 1 mark: 20 min	2
8	26.10	Estimate: $27 \div 1 \approx 27$. $27.4 \div 1.05 = 26.0952\dots$ 1 mark: estimate 1 mark: 26.10	2
9	24	$3.6 \div 0.15 = 360 \div 15 = 24$ 1 mark: working 1 mark: 24	2
10	\$16.90	$86.40 \div 6 = 14.40$ $14.40 + 2.50 = 16.90$ 1 mark: 14.40 1 mark: adds tip 1 mark: \$16.90	3

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C**Reasoning** *sample answers and marking criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	Both multiplied by 10	Multiplying both numbers by 10 keeps the ratio the same – the same number of 0.8s fit in 6.4 as 8s fit in 64. <i>2 marks: explanation</i>	2
2	$30 > 12$	0.4 is less than 1, so more than 12 lots of 0.4 fit into 12 (there are 2.5 in each whole). <i>2 marks: explanation</i>	2
3	3	He divided the digits but kept a decimal point. $0.6 \div 0.2 = 6 \div 2 = 3$ (three 0.2s fit in 0.6). <i>1 mark: explanation</i> <i>1 mark: 3</i>	2
4	$5 \div 2$, $5 \div 1.25$, $5 \div 0.5$, $5 \div 0.05$	The smaller the divisor, the bigger the answer. (Values: 2.5, 4, 10, 100) <i>1 mark: order</i> <i>2 marks: explanation</i>	3

D**Challenge** *solutions and marking criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	3.6	Dividing by 0.25 multiplies by 4, so the number is $14.4 \div 4 = 3.6$ <i>1 mark: inverse</i> <i>1 mark: 3.6</i>	2
2	(a) 12 (b) 12 (c) 12 000	(a), (b): both numbers scaled by the same amount. (c): divisor 1000 times smaller $\rightarrow$ answer 1000 times larger. <i>1 mark each</i>	3
3	A \$1.20, B \$1.15 per 100 g – Brand B	$4.50 \div 3.75 = 1.20$; $6.90 \div 6 = 1.15$ <i>1 mark: A</i> <i>1 mark: B (units converted)</i> <i>1 mark: conclusion</i>	3
4	(a) 6 (b) 0.06	(a) $4.2 \div 0.7 = 6$ (b) $4.2 \div 70 = 0.06$ <i>1 mark each</i>	2