

WA7MNAC6

Calculating with number

Core + Challenge

Multiplying Decimals — Marking Key

I can multiply decimals using place value and efficient strategies, and check that my answer is reasonable.

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: 23 Section C Reasoning: 9 Section D Challenge: 10 **Total: 58**

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	1.2	$3 \times 4 = 12 \rightarrow 1 \text{ d.p.} \rightarrow 1.2$
2	0.3	$6 \times 5 = 30 \rightarrow 2 \text{ d.p.} \rightarrow 0.30$
3	7.2	$24 \times 3 = 72 \rightarrow 7.2$
4	0.56	$7 \times 8 = 56 \rightarrow 0.56$
5	0.6	$15 \times 4 = 60 \rightarrow 0.60$
6	360	move 2 places $\rightarrow 360$
7	0.3	$\frac{1}{4}$ of $1.2 = 0.3$
8	9.9	$45 \times 22 = 990 \rightarrow 9.90$
9	0.072	$8 \times 9 = 72 \rightarrow 3 \text{ d.p.} \rightarrow 0.072$
10	10	$125 \times 8 = 1000 \rightarrow 10.00$
11	70.2	$7.8 \times 10 - 7.8 = 70.2$
12	0.09	$15 \times 6 = 90 \rightarrow 0.090$
13	8.2	$205 \times 4 = 820 \rightarrow 8.20$
14	0.441	$63 \times 7 = 441 \rightarrow 0.441$
15	4	$125 \times 32 = 4000 \rightarrow 4.000$
16	1	$4 \times 250 = 1000 \rightarrow 3 \text{ d.p.} \rightarrow 1$

Multiplying Decimals · WA7MNAC6

B

Core answers, working and marks

/ 23 marks

Q	Answer	Working / sample response	Marks
1	\$79.38	$1.89 \times 42 = 79.38$ 1 mark: working 1 mark: \$79.38	2
2	8.4 m ²	$35 \times 24 = 840 \rightarrow 8.40$ 1 mark: working 1 mark: 8.4 m ²	2
3	(a) \$14.10 (b) \$5.90	$6 \times 2.35 = 14.10$; $20 - 14.10 = 5.90$ 1 mark each	2
4	\$565.95	Area = $4.2 \times 3.5 = 14.7 \text{ m}^2$ $14.7 \times 38.50 = 565.95$ 1 mark: 14.7 m ² 1 mark: multiplication 1 mark: \$565.95	3
5	9 L	$12 \times \frac{3}{4} = 9$ 1 mark: working 1 mark: 9 L	2
6	≈ 30; 29.89	$49 \times 61 = 2989 \rightarrow 29.89$, close to 30 1 mark: estimate 1 mark: 29.89	2
7	156 USD	$240 \times 0.65 = 156$ 1 mark: working 1 mark: 156	2
8	\$11.50	$4.60 \times 2.5 = 4.60 \times 2 + 2.30 = 11.50$ 1 mark: working 1 mark: \$11.50	2
9	4.05 m ²	One tile: $0.3 \times 0.3 = 0.09 \text{ m}^2$ $45 \times 0.09 = 4.05$ 1 mark: 0.09 m ² 1 mark: multiplication 1 mark: 4.05 m ²	3
10	\$41.44	$18.5 \times 7 = 129.5 \text{ kWh}$ $129.5 \times 0.32 = 41.44$ 1 mark: 129.5 kWh 1 mark: multiplication 1 mark: \$41.44	3

Multiplying Decimals · WA7MNAC6

C

Reasoning *sample answers and marking criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	Multiplying by less than 1	0.6×0.5 means half of $0.6 = 0.3$. Taking part of a number gives less than the number. <i>2 marks: clear reason</i>	2
2	0.08	$\frac{4}{10} \times \frac{2}{10} = \frac{8}{100} = 0.08$. There are 2 decimal places, not 1. <i>1 mark: explanation</i> <i>1 mark: 0.08</i>	2
3	(a) 10.81 (b) 108.1 (c) 1.081	Count how many places each factor has moved and adjust 1081. <i>1 mark each</i>	3
4	True	$48 \times 2.5 = (12 \times 4) \times 2.5 = 12 \times (4 \times 2.5) = 12 \times 10$ <i>1 mark: true</i> <i>1 mark: regrouping explanation</i>	2

D

Challenge *solutions and marking criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	e.g. 0.4×0.6 ; 0.3×0.8	$4 \times 6 = 24$ and $3 \times 8 = 24$, with 2 decimal places in total. (Also 0.2×1.2) <i>1 mark each pair</i>	2
2	(a) 9 (b) 0.36	$3.6 \div 0.4 = 36 \div 4 = 9$ $9 \times 0.04 = 0.36$ <i>1 mark each</i>	2
3	3.2×7 and 5.6×4	$224 = 32 \times 7 = 56 \times 4$ (these are the only ways with different digits) <i>1 mark: 224 as a product</i> <i>1 mark each correct way</i>	3
4	(a) 32.4 cm^2 (b) 25.2 cm	Length = $2.5 \times 3.6 = 9 \text{ cm}$ Area = $9 \times 3.6 = 32.4$; Perimeter = $2 \times (9 + 3.6) = 25.2$ <i>1 mark: length 9 cm</i> <i>1 mark: area</i> <i>1 mark: perimeter</i>	3