Unit 5 · Decimal

HARDER PRACTICE QUESTIONS · ANSWER KEY

Full marks 30

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Spot the errors

ANSWER U · 3

i. $3 \times 2 = 6$, and there are 2 digits after the points in all: $\mathbf{0.3 \times 0.2 = 0.06}$. Multiply both numbers by 10: $4.5 \div 0.5 = 45 \div 5 = \mathbf{9}$.

ii. 0.3×0.2 means 3 tenths **of** 2 tenths, so it must be less than 0.2; 0.6 is bigger. And $4.5 \div 0.5$ asks how many halves fit into 4.5: about 9, not less than 1. Dividing by a number less than 1 gives a **bigger** answer.

MARKING SCHEME

- ✓ 0.06.
- ✓ 9.
- ✓ A check by size for each.

2 One product, many answers

ANSWER A · 4

i. $2 + 1 = 3$ digits after the points: **11.092**. (Estimate: about $2 \times 5 = 10$.)

ii. $3 + 0 = 3$ digits: **11.092**. (About a quarter of 47.)

iii. $1 + 3 = 4$ digits: **1.1092**. (About $24 \times 0.05 = 1.2$.)

iv. From i, $2.36 \times 4.7 = 11.092$, so $\mathbf{11.092 \div 4.7 = 2.36}$. (Check: $11 \div 5$ is about 2.)

MARKING SCHEME

- ✓ 11.092.
- ✓ 11.092.
- ✓ 1.1092.
- ✓ 2.36, from the product in i.

3 The missing digit

ANSWER A · 3

Work backwards: $3.\square = 2.04 \div 0.6 = 20.4 \div 6 = 3.4$. The missing digit is **4**.

Check: $34 \times 6 = 204$, with $1 + 1 = 2$ digits after the point: $3.4 \times 0.6 = 2.04$ ✓

MARKING SCHEME

- ✓ Divide 2.04 by 0.6.
- ✓ $20.4 \div 6 = 3.4$.
- ✓ The digit 4, checked.

4 Petrol for a ride

ANSWER A · 4

i. $63 \div 45 = 1.4$: **1.4 liters**.

ii. $1.4 \times 170 = 14 \times 17 = 238$: **Rs 238**.

iii. Rs 340 buys $340 \div 170 = 2$ liters, and $2 \times 45 = \mathbf{90\ km}$.

MARKING SCHEME

- ✓ 1.4 liters.
- ✓ Rs 238.
- ✓ Rs 340 buys 2 liters.
- ✓ 90 km.

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5 Which is the better buy?

ANSWER A · 3

i. Small: 75 ÷ 1.5 = 750 ÷ 15 = **Rs 50 a liter**. Big: 108 ÷ 2.25 = 10800 ÷ 225 = **Rs 48 a liter**.

ii. The **big bottle**, by **Rs 2** a liter.

MARKING SCHEME

- ✓ Rs 50 a liter.
- ✓ Rs 48 a liter.
- ✓ The big bottle, Rs 2 a liter cheaper.

6 Rounding backwards

ANSWER HA · 3

i. **3.65 cm**: the next digit after 3.6 is 5, so it rounds up to 3.7. (3.64 rounds to 3.6.)

ii. **3.74 cm**. (3.75 rounds up to 3.8.)

iii. 3.65, 3.66, …, 3.74: **10 lengths**.

MARKING SCHEME

- ✓ 3.65 cm.
- ✓ 3.74 cm.
- ✓ 10.

7 A packet of paper

ANSWER A · 3

i. 8.5 ÷ 1000: every digit moves three places right, **0.0085 cm**.

ii. 250 × 0.0085 = **2.125 cm**. (A quarter of the packet: 8.5 ÷ 4 = 2.125.)

iii. 1.7 ÷ 0.0085 = 17000 ÷ 85 = **200 sheets**.

MARKING SCHEME

- ✓ 0.0085 cm.
- ✓ 2.125 cm.
- ✓ 200 sheets.

8 Make your own

ANSWER A · 3

For example: **"A family eats 1.2 kg of rice a day. How much rice do they eat in two and a half days?"**

2.5 × 1.2: 25 × 12 = 300, with 2 digits after the points: 3.00. They eat **3 kg** of rice.

Any problem is right if 2.5 of something is multiplied by 1.2 (or 1.2 of something by 2.5) and the answer's unit makes sense.

MARKING SCHEME

- ✓ A problem that matches 2.5 × 1.2.
- ✓ 3 (or 3.00).
- ✓ What 3 means, with its unit.

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9 Think: a sum and a product

ANSWER HA · 4

i. Tenths × tenths are hundredths, so the numbers without their points multiply to **36**.

ii. Pairs that multiply to 36: 1 and 36, 2 and 18, 3 and 12, 4 and 9, 6 and 6. As tenths, both less than 1, that leaves 4 and 9 (0.4 and 0.9) and 6 and 6 (0.6 and 0.6). Their sums are 1.3 and 1.2, so the two decimals are **0.4 and 0.9**.

iii. **0.3 and 1.2**: $0.3 \times 1.2 = 0.36$ and $0.3 + 1.2 = 1.5$.

MARKING SCHEME

- ✓ 36.
- ✓ The pairs that multiply to 36 tried.
- ✓ 0.4 and 0.9.
- ✓ 0.3 and 1.2.

Marks by level	Knowledge	Understanding	Application	Higher ability	Total
Marks	0	3	20	7	**30**

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