Unit 6 · Decimal

HARDER PRACTICE QUESTIONS · ANSWER KEY

Full marks 33

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

1 Spot the error

ANSWER U · 3

i. **No.** Compare the tenths first. 0.5 has **5** tenths, and 0.45 has only **4** tenths (and 5 hundredths). Writing 0.5 as 0.50 shows it: 50 hundredths against 45.

ii. As thousandths: 0.500, 0.450, 0.405, 0.054. So the order is **0.054, 0.405, 0.45, 0.5**.

MARKING SCHEME

- ✓ No, with the tenths compared.
- ✓ 0.054 is smallest and 0.5 biggest.
- ✓ The full order: 0.054, 0.405, 0.45, 0.5.

2 Digit cards

ANSWER HA · 3

i. The two biggest digits before the point: **75.30**.

ii. Three digits after the point leaves one before it. Put 0 there and the rest in order: **0.357**.

iii. Start with 5 as the ones digit, and make what comes after it as small as possible: **5.037**. It is only 0.037 more than 5. With 3 before the point you get at most 3.75, which is much further away.

MARKING SCHEME

- ✓ 75.30.
- ✓ 0.357.
- ✓ 5.037.

3 Missing digits

ANSWER HA · 3

Hundredths: $7 + \square$ must end in 2, so the digit is **5** ($7 + 5 = 12$): write 2, carry 1.

Tenths: $\square + 5 + 1$ must end in 0, so the digit is **4** ($4 + 5 + 1 = 10$): write 0, carry 1.

Ones: $3 + \square + 1 = 7$, so the digit is **3**.

3.47 + 3.55 = 7.02. Check by adding again. ✓

MARKING SCHEME

- ✓ The hundredths digit 5, with 1 carried.
- ✓ The tenths digit 4, with 1 carried.
- ✓ The ones digit 3: 3.47 + 3.55.

4 Shopping in kilograms

ANSWER A · 4

i. $\frac{3}{4} = \frac{75}{100} = 0.75$ kg, $1\frac{2}{5} = 1 + \frac{4}{10} = 1.4$ kg, and 0.65 kg.

ii. $0.75 + 1.40 + 0.65 =$ **2.80 kg**, which is 2.8 kg.

iii. $3.00 - 2.80 =$ **0.20 kg**, which is 0.2 kg.

MARKING SCHEME

- ✓ 0.75 kg and 1.4 kg.
- ✓ Points in a line, with 1.4 written as 1.40.
- ✓ 2.8 kg.
- ✓ 0.2 kg.

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5 Points out of line

ANSWER U · 3

i. He lined up the last digits, so he added the 5 hundredths to the 6 tenths. The **points** must be in a line.
ii. $4.60 + 2.35 =$ **6.95**.
iii. 4.6 alone is more than 2.81, and adding can't make a number smaller. Or: $4 + 2 = 6$, so the answer must be more than 6.

MARKING SCHEME

✓ He lined up the last digits, not the points.
✓ 6.95.
✓ A check: the answer must be more than 4.6 (or more than 6).

6 The same digit, different worth

ANSWER A · 3

i. The first 3 is in the tens place: **30**. The second 3 is in the tenths place: **0.3**. The first 7 is in the ones place: **7**. The second 7 is in the hundredths place: **0.07**.
ii. From tens to tenths is two places to the right, and each place is ten times smaller: $10 \times 10 =$ **100 times**. (30 is 300 tenths, and 0.3 is 3 tenths.)
iii. From ones to hundredths is also two places: **100 times**. (7 is 700 hundredths, and 0.07 is 7 hundredths.)

MARKING SCHEME

✓ 30, 0.3, 7 and 0.07.
✓ 100 times.
✓ 100 times.

7 In between

ANSWER HA · 3

i. For example **0.41, 0.45 and 0.48**. Any decimal starting 0.4… and more than 0.4 is right.
ii. Write them as thousandths: 0.450 and 0.460. Any of 0.451 to 0.459 is between, for example **0.455**.
iii. Halfway is 0.455, so it must be more than that: **0.456, 0.457, 0.458 or 0.459**.

MARKING SCHEME

✓ Three decimals between 0.4 and 0.5.
✓ One between 0.45 and 0.46.
✓ One of 0.456 to 0.459.

8 A race

ANSWER A · 4

i. The smallest time is the fastest. As hundredths: 18.25, 17.90, 18.08, 17.95. Fastest to slowest: **17.9 (Dawa), 17.95 (Kriti), 18.08 (Anish), 18.25 (Sabina)**. **Dawa** won.
ii. $18.25 - 17.90 =$ **0.35 seconds**.
iii. $17.95 - 17.90 =$ **0.05 seconds**.

MARKING SCHEME

✓ The order of times, fastest first.
✓ Dawa won.
✓ 0.35 seconds.
✓ 0.05 seconds.

9 Fraction or decimal?

ANSWER

i. $\frac{3}{4} = 0.75$. $0.75 > 0.70$, so $\mathbf{\frac{3}{4}}$ is bigger.

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ii. $\frac{2}{5} = 0.4 = 0.40$. $0.40 > 0.38$, so $\mathbf{\frac{2}{5}}$ is bigger. **A · 4**

iii. $\frac{7}{25} = \frac{28}{100} = 0.28$. $0.28 < 0.30$, so **0.3** is bigger.

iv. $1\frac{1}{4} = 1.25$. $1.25 < 1.30$, so **1.3** is bigger.

MARKING SCHEME

✓ i. $\frac{3}{4}$, as 0.75.

✓ ii. $\frac{2}{5}$, as 0.40.

✓ iii. 0.3, as $\frac{7}{25} = 0.28$.

✓ iv. 1.3, as $1\frac{1}{4} = 1.25$.

10 Think

ANSWER **HA · 3**

i. **Less, by 0.02.** 2.99 is 0.01 less than 3, and 0.99 is 0.01 less than 1. So their sum is 0.01 + 0.01 = 0.02 less than 3 + 1 = 4. (2.99 + 0.99 = 3.98.)

ii. For example **0.375 + 0.625 = 1.000**. Any pair works when the thousandths add up to 1,000.

MARKING SCHEME

✓ Less than 4.

✓ By 0.02, with the reason.

✓ Two decimals that add up to 1.

Marks by level	Knowledge	Understanding	Application	Higher ability	Total
Marks	0	6	15	12	**33**

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