Answers - Decimals and thousandths

Year: Year 5

Answer to Question 1

a. 3 tenths = **0.3**.
b. 7 hundredths = **0.07** (the zero holds the tenths place).
c. 9 thousandths = **0.009**.
d. 47 hundredths = **0.47**.
e. The whole part is 4 and 6 tenths is 0.6, so **4.6**.
f. 125 thousandths = **0.125**.

Answer to Question 2

a. The 5 is in the tenths column: **0.5** or $\frac{5}{10}$.
b. The 6 is in the hundredths column: **0.06**.
c. The 3 is in the thousandths column: **0.003**.
d. In 0.092 the 9 is in the hundredths column, **0.09**. In 9.02 the 9 is in the ones column, **9**.

Answer to Question 3

a. $0.5 = \frac{5}{10} = \frac{1}{2}$.
b. $0.25 = \frac{25}{100} = \frac{1}{4}$.
c. $0.8 = \frac{8}{10} = \frac{4}{5}$.
d. $0.125 = \frac{125}{1000} = \frac{1}{8}$.
e. $0.06 = \frac{6}{100} = \frac{3}{50}$.

Answer to Question 4

a. 0.35 > 0.305. 0.350 and 0.305: the tenths are equal and 5 hundredths is more than 0.
b. 2.7 > 2.07. 2.70 and 2.07: 7 tenths is more than 0 tenths.
c. 0.6 = 0.60. 0.60 is just 0.6 with an extra zero, so they are equal.
d. 5.099 < 5.1. 5.099 and 5.100: 0 tenths is less than 1 tenth.

Answer to Question 5

a. **0.04, 0.4, 0.404, 0.44, 4.004**.

b. **4.004, 0.44, 0.404, 0.4, 0.04**.
c. 0.5 − 0.44 = 0.06 and 0.5 − 0.404 = 0.096, so **0.44** is closest.

Answer to Question 6

a. 6.482: look at the tenths digit. **6**.
b. 6.482: look at the hundredths digit. **6.5**.
c. 12.95: look at the tenths digit. **13**.
d. 12.95: look at the hundredths digit. **13**.
e. 0.375: look at the hundredths digit. **0.4**.
f. 0.375: look at the tenths digit. **0**.

Answer to Question 7

a. The smallest time is 12.09, so **Dan** won.
b. **Dan 12.09, Eve 12.405, Zara 12.45, Mo 12.5**.
c. 12.5 − 12.09 = **0.41 seconds**.
d. 12.45 → **12 s**; 12.5 → **13 s** (the tenth is 5); 12.405 → **12 s**; 12.09 → **12 s**.

Answer to Question 8

a. 0.75 = $\frac{3}{4}$ kg and 0.4 = $\frac{2}{5}$ kg.
b. Apples (1.25 kg) have the greatest mass and grapes (0.4 kg) have the least.
c. 0.4 + 0.75 + 1.25 = **2.4 kg**.
d. 2.4 kg is 2 kg to the nearest kilogram, because the tenths digit is 4.

Answer to Question 9

a. 1.5 × 1,000 = **1,500 ml**; 0.75 × 1,000 = **750 ml**; 0.125 × 1,000 = **125 ml**.
b. 0.75 + 0.125 = **0.875 litres**.
c. 3 − 0.875 = **2.125 litres**.
d. 0.875 ÷ 0.25 = 3.5, so he can fill **3 cups** (with half a cup left over).

Answer to Question 10

a. **30.9, 30.95, 31.045, 31.52**.
b. 30.9 and 30.95 differ by 0.05 and no other pair is that close, so **30.9 and 30.95**.
c. 31.52 to one decimal place: the hundredths digit is 2, so **31.5**.
d. 30.9 − 29.99 = **0.91 seconds**.

Answer to Question 11

a. 0.025 × 10 = **0.25 kg**.
b. 0.025 × 100 = **2.5 kg**.
c. 0.025 × 1,000 = **25 kg**.
d. 2.5 kg is the mass of 100 sweets, so the tray holds **100 sweets**.

Answer to Question 12

a. 0.45 × 10 = **£4.50**.
b. 0.45 × 100 = **£45**.
c. 0.45 × 1,000 = **£450**.
d. 7.50 ÷ 10 = **£0.75** (75p).

Answer to Question 13

a. **Friday** was the wettest (1.2 cm) and **Thursday** the driest (0 cm).
b. 0.305 < 0.35 < 0.5, so **Tuesday, Monday, Wednesday**.
c. 0.35 → 0.4; 0.305 → 0.3; 0.5 → 0.5; 0 → 0.0; 1.2 → 1.2.
d. 0.35 + 0.305 + 0.5 + 0 + 1.2 = **2.355 cm**.

Answer to Question 14

a. **1.54, 1.5, 1.452, 1.045**.
b. 1.54 − 1.045 = **0.495 m**.
c. 1.452 → 1.5; 1.5 → 1.5; 1.045 → 1.0; 1.54 → 1.5.
d. 1.5 = 1.500, and 1.500 is bigger than 1.452 because 5 tenths is more than 4 tenths. The number of digits does not decide the size.

Answer to Question 15

a. **Dee** won with 4.7 m and **Eli** was last with 4.059 m.
b. **Dee 4.7, Amir 4.62, Beth 4.6, Chen 4.065, Eli 4.059**.
c. 4.7 − 4.6 = **0.1 m**, which is 10 cm.
d. Every jump rounds to **5 m** or **4 m**: 4.7, 4.62, 4.6 → 5 m; 4.065 and 4.059 → 4 m. Rounding to the nearest metre does not show who won.
e. 4.7 + 4.62 = **9.32 m**, which is **more than 9 m**.

Answer to Question 16

a. **Greenway** (1.449) is the cheapest and **Hilltop** (1.500) is the dearest.
b. 1.459 → 1.5; 1.449 → 1.4; 1.5 → 1.5. **Quickfill and Hilltop both round to 1.5** but Greenway rounds to 1.4.
c. 10 litres: 1.459 × 10 = **£14.59**. 100 litres: 1.459 × 100 = **£145.90**.
d. Quickfill 100 litres: £145.90. Greenway 100 litres: 1.449 × 100 = £144.90. The difference is **£1.00**.
e. Rounding hides small differences. The price of 1.459 and 1.449 differ by one penny per litre, which is £1 on a 100-litre fill, so the exact price matters.

Answer to Question 17

a. 4.5 − 3.2 = **1.3 cm**.
b. Growth: Day 1 to 2 is 0.25, Day 2 to 3 is 0.45, Day 3 to 4 is 0.225, Day 4 to 5 is 0.375. The most is **between Day 2 and Day 3**.
c. 4.125 = 4 and $\frac{125}{1000}$ = 4 and $\frac{1}{8}$, so $4\frac{1}{8}$ **cm**.
d. Average growth: 1.3 ÷ 4 = 0.325 cm a day. Day 6: 4.5 + 0.325 = **4.825 cm**.
e. 3.2 × 10 = **32 mm**.

Answer to Question 18

a. 0.25 × 10 = **2.5 kg**.
b. Butter: 0.125 × 100 = **12.5 kg**. Sugar: 0.075 × 100 = **7.5 kg**.
c. 0.125 × 1,000 = **125 g**.
d. 0.075 ÷ 10 = **0.0075 kg**, which is 7.5 g.
e. Flour: 0.25 × 100 = 25 kg. Cost: 25 × 1.20 = **£30**.

Answer to Question 19

a. Put the biggest digit first and then the rest in order: **7.530** (or 7.53).
b. Put 0 first, then the smaller digits in order: **0.357**.
c. Starting with 5 gives 5.037, which is just above 5. The distance is 5.037 − 5 = **0.037**. No other number is closer: 3.xxx and 7.xxx are far away.
d. 0.357 = $\frac{357}{1000}$.
e. 7.530: the hundredths digit is 3, so round down: **7.5**.

Answer to Question 20

a. To the nearest whole number it is 4, so it is at least 3.5. To one decimal place it is 3.5, so it is less than 3.55. So the number lies from **3.50 up to (not including) 3.55**.
b. The tenths digit is 5. The hundredths digit is from 0 to 4. The hundredths digit is 3 more than the thousandths: (hundredths, thousandths) = (3, 0) or (4, 1). That

gives 3.530 or 3.541. Digit sum: 3 + 5 + 3 + 0 = 11, but 3 + 5 + 4 + 1 = 13. So the number is **3.541**.