

WA7MNAUN7

Understanding number

Core + Challenge

Rounding Decimals

I can use place value to round decimals to a given number of decimal places and explain my rounding.

Name: _____ Date: _____ Score: _____ / 57

Key idea

Find the rounding digit (the last place you keep), then look at the **next** digit: 5 or more → round up; 4 or less → keep.

3.64 lies between 3.6 and 3.7. It is 0.04 above 3.6 and 0.06 below 3.7, so to 1 d.p. it rounds to **3.6**.

To 3 d.p.: 1.6248 → 1.625 1.6273 → 1.627 1.6235 → 1.624

Carrying: 9.995 to 2 d.p. → 10.00 (keep the zeros – they show the accuracy). **Never round twice:** round from the original number.

A Fluency *practise the skill*

/ 16 marks

Round each number as instructed.

1. 3.64 to 1 d.p. _____

9. 1.6248 to 3 d.p. _____

2. 7.85 to 1 d.p. _____

10. 1.6273 to 3 d.p. _____

3. 12.049 to 1 d.p. _____

11. 0.0006 to 3 d.p. _____

4. 0.96 to 1 d.p. _____

12. 2.34567 to 3 d.p. _____

5. 5.678 to 2 d.p. _____

13. 18.5 to a whole number _____

6. 0.4349 to 2 d.p. _____

14. 99.49 to a whole number _____

7. 9.995 to 2 d.p. _____

15. 0.049 to 1 d.p. _____

8. 3.1415 to 2 d.p. _____

16. 6.9951 to 2 d.p. _____

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B**Core** *apply the skill to problems*

/ 22 marks

- 1 A calculator shows $22 \div 7 = 3.142857\dots$. Round this to **(a)** 2 d.p. **(b)** 3 d.p. [2 marks]

.....

Answer: _____

- 2 A fuel bowser shows \$47.867. How much is paid, to the nearest cent? [2 marks]

.....

Answer: _____

- 3 A sprinter's time is 12.456 seconds. Round it to **(a)** 1 d.p. **(b)** 2 d.p. [2 marks]

.....

Answer: _____

- 4 A number with two decimal places rounds to 4.7 (1 d.p.). What are the smallest and largest numbers it could be? [2 marks]

.....

.....

Answer: _____

- 5 \$100 is shared equally between 3 people. [3 marks]
(a) How much does each person get, to the nearest cent?
(b) How much money is left over?

.....

.....

Answer: _____

- 6 Round 2.996 to 2 decimal places. Explain why the answer is written with two zeros. [2 marks]

.....

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Answer: _____

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- 7 A student's height is measured as 1.6749 m. Round it to the nearest centimetre. [2 marks]

Answer: _____

- 8 Use place value to explain whether 3.64 is closer to 3.6 or 3.7. [2 marks]

Answer: _____

- 9 Fuel costs \$2.495 per litre. [2 marks]

- (a) What is this to the nearest cent?
(b) What do 40 litres cost (use the exact price)?

Answer: _____

- 10 Three long-jump results are 7.456 m, 7.46 m and 7.4 m. [3 marks]

- (a) Order them from shortest to longest.
(b) Round each to 1 d.p. What do you notice?

Answer: _____

C Reasoning *explain, justify and check*

/ 9 marks

- 1 Explain why 1.6235 rounds to 1.624 (3 d.p.) but 1.6234 rounds to 1.623. [2 marks]

- 2 Kai rounded 4.449 to 1 d.p. by first rounding to 4.45, then to 4.5. Explain his mistake and give the correct answer. [3 marks]

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- 3 Is 0.30 the same as 0.3? Explain why someone might write 0.30 when rounding. [2 marks]

- 4 Explain why 9.96 rounded to 1 d.p. is 10.0, not 9.10. [2 marks]

D Challenge *multi-step and problem-solving*

/ 10 marks

- 1 A number has three decimal places. It rounds to 2.6 (1 d.p.) **and** to 2.55 (2 d.p.). What are the smallest and largest possible values? [3 marks]

Answer: _____

- 2 Add $1.34 + 2.34 + 3.34$ exactly, then round to 1 d.p. Now round each number to 1 d.p. first, then add. Compare and explain. [3 marks]

Answer: _____

- 3 How many numbers with exactly two decimal places (such as 4.73) round to 5 when rounded to the nearest whole number? [2 marks]

Answer: _____

- 4 $5 \div 7 = 0.714285714285\dots$ The six digits 714285 repeat forever. What digit is in the 20th decimal place? [2 marks]

Answer: _____

How did I go?

Fluency ____ / 16 Core ____ / 22 Reasoning ____ / 9 Challenge ____ / 10 **Total ____ / 57**

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