

WA7MNAC2

Calculating with number

Core + Challenge

Finding a Percentage of a Quantity

I can find a percentage of a quantity mentally, with jottings or with a calculator, and use it to solve problems.

Name: _____ Date: _____ Score: _____ / 58

Key idea

Build from 10% and 1%: 10% of 570 = 57, so 5% = 28.5, 30% = 171, 35% = 171 + 28.5 = 199.5

Use fractions: 25% = $\frac{1}{4}$, 50% = $\frac{1}{2}$, 75% = $\frac{3}{4}$, 12.5% = $\frac{1}{8}$, 20% = $\frac{1}{5}$. 25% of 60 = $\frac{1}{4} \times 60 = 15$

Calculator: change the percentage to a decimal and multiply. 17% of \$9.20 = $0.17 \times 9.20 = 1.564 \approx \$1.56$

Discounts and increases: 20% off \$85 → discount \$17, sale price \$68. Or: 80% of \$85 = \$68

A Fluency *practise the skill*

/ 16 marks

Work out each amount. Use mental strategies except Q15 (calculator, nearest cent).

1. 10% of 570 = _____

9. 15% of 80 = _____

2. 5% of 570 = _____

10. 12.5% of 64 = _____

3. 30% of 570 = _____

11. 40% of 35 = _____

4. 25% of 60 = _____

12. 150% of 30 = _____

5. 50% of 86 = _____

13. 35% of 260 = _____

6. 20% of 45 = _____

14. 2.5% of 400 = _____

7. 75% of 120 = _____

15. 17% of \$9.20 = _____

8. 1% of 350 = _____

16. 0.5% of 1200 = _____

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

/ 22 marks

- 1 A \$85 pair of runners is reduced by 20%. [2 marks]

(a) How much is the discount?

(b) What is the sale price?

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Answer: _____

- 2 A \$249 game console has 10% GST added. What is the total price? [2 marks]

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Answer: _____

- 3 A school has 840 students and 45% are girls. How many boys are there? [2 marks]

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Answer: _____

- 4 A family leaves a 15% tip on a \$64 restaurant bill. How much is the tip? [2 marks]

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Answer: _____

- 5 A \$1200 laptop is on sale. Store A offers 12% off. Store B offers \$150 off. Which store is cheaper, and by how much? [3 marks]

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Answer: _____

- 6 A 750 g box of cereal now has 30% extra free. How many grams are in the new box? [2 marks]

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Answer: _____

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- 7 A Perth house worth \$620 000 increased in value by 4.5% in one year. By how much did its value increase? [2 marks]

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Answer: _____

- 8 In a class of 28, 25% walk to school, 50% catch the bus and the rest are driven. How many students are driven? [2 marks]

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Answer: _____

- 9 A savings account pays 3.5% interest per year. How much interest is earned on \$2400 in one year? [2 marks]

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Answer: _____

- 10 Sam earns \$260 a week. He spends 35% on rent and 12% on transport. How much is left? [3 marks]

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Answer: _____

C Reasoning *explain, justify and check*

/ 9 marks

- 1 Explain how to find 35% of 260 mentally, using 10% and 5%. [2 marks]

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- 2 Is 20% of 50 the same as 50% of 20? Explain why this works, and use it to find 8% of 25 mentally. [3 marks]

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- 3 Josh says: "A 50% discount followed by another 50% discount makes an item free." Explain why he is wrong. [2 marks]

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- 4 Without calculating exactly, estimate 19% of \$412. Explain your estimate. [2 marks]

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D Challenge *multi-step and problem-solving*

/ 11 marks

- 1 A \$200 jacket's price increases by 10%, then the new price decreases by 10%. [3 marks]
(a) What is the final price?
(b) Explain why it is not \$200.

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Answer: _____

- 2 30% of a number is 42. What is 45% of the same number? [2 marks]

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Answer: _____

- 3 A shop buys a toy for \$40, marks the price up by 25%, then later offers 20% off the marked price. What is the final price? Explain the result. [3 marks]

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Answer: _____

- 4 In a class, 60% of students play a sport. Of those, 25% play netball. 9 students play netball. How many students are in the class? [3 marks]

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Answer: _____

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How did I go?Fluency ____ / 16 Core ____ / 22 Reasoning ____ / 9 Challenge ____ / 11 **Total ____ / 58**

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