

WA8MNAC1

Calculating with number

Core + Challenge

Percentage Change and Original Amounts

I can calculate percentage change, profit and loss percentages, and work backwards to find an original amount.

Name: _____ Date: _____ Score: _____ / 58

Key idea

Percentage change = $\frac{\text{change}}{\text{original}} \times 100\%$. \$40 → \$46: change \$6, so $\frac{6}{40} \times 100\% = 15\%$ increase.

Profit = selling price – cost price. **Profit %** = $\frac{\text{profit}}{\text{cost}} \times 100\%$. A **loss %** also divides by the cost price (the original).

Reverse percentages: new amount = original × multiplier, so **original** = **new amount ÷ multiplier**.

\$54 after 10% off → $54 \div 0.9 = \$60$. \$66 including GST → $66 \div 1.1 = \$60$ (so the GST was \$6).

A

Fluency *practise the skill*

/ 16 marks

Find each percentage change or original amount. 1 mark each.

1. 50 → 60: % change _____
2. 80 → 60: % change _____
3. \$40 → \$46: % change _____
4. 250 → 275: % change _____
5. 120 → 102: % change _____
6. \$2.50 → \$3: % change _____
7. Cost \$20, sold for \$25: profit % _____
8. Cost \$80, sold for \$68: loss % _____
9. +10% gives 77. Original? _____
10. 20% off gives \$64. Original? _____
11. \$55 incl. GST: price before GST _____
12. GST included in \$110 _____
13. +25% gives 150. Original? _____
14. 30% off gives \$49. Original? _____
15. 16 → 20: % change _____
16. 20 → 16: % change _____

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

/ 22 marks

- 1 A house in Piara Waters sold for \$520 000. Two years later it sold for \$572 000. Find the percentage increase. [2 marks]

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Answer: _____

- 2 Sara bought a bike for \$450 and later sold it for \$315. Find her percentage loss. [2 marks]

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Answer: _____

- 3 In a sale, jeans are 25% off. The sale price is \$67.50. What was the original price? [2 marks]

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Answer: _____

- 4 A receipt shows a total of \$148.50, including GST. Find the price before GST and the amount of GST. [2 marks]

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Answer: _____

- 5 A school had 1150 students in 2025 and 1242 students in 2026. Find the percentage increase. [2 marks]

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Answer: _____

- 6 After a 12% increase, the weekly rent on a unit is \$672. What was the rent before the increase? [2 marks]

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Answer: _____

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- 7 At a market stall, Priya buys 40 candles for \$6 each. She sells 32 of them for \$10.50 each and the rest for \$4 each. Find her profit as a percentage of the cost, correct to 1 decimal place. [3 marks]

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Answer: _____

- 8 The price of petrol fell from \$1.84 per litre to \$1.61 per litre. Find the percentage decrease. [2 marks]

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Answer: _____

- 9 After a 4% pay rise, Mr Nguyen earns \$1352 per week. What did he earn before the rise? [2 marks]

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Answer: _____

- 10 A Perth Scorchers ticket rose from \$32 to \$40, then later fell back from \$40 to \$32. [3 marks]
(a) Find the percentage increase. (b) Find the percentage decrease.
(c) Explain why the two percentages are different.

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C Reasoning *explain, justify and check*

/ 9 marks

- 1 Jeans cost \$80 after 20% off. Max says the original price was $80 \times 1.2 = \$96$. Explain his mistake and find the correct original price. [3 marks]

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- 2 A price rose from \$50 to \$60. Priya says this is a 20% increase. Jai says it is a 16.7% increase. Who is correct? Explain. [2 marks]

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- 3 True or false? 'To remove GST from a price, just take 10% off.' Use \$110 to explain. [2 marks]

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- 4 Explain what a 100% decrease means. Can a price be decreased by more than 100%? [2 marks]

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D Challenge *multi-step and problem-solving*

/ 11 marks

- 1 A TV is reduced by 20%, and then a further 15% is taken off the sale price. It now costs \$1020. What was the original price? [3 marks]

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Answer: _____

- 2 A shop sells two lamps for \$120 each, one at a 20% profit and the other at a 20% loss. Overall, is there a profit or a loss? Give the amount and the percentage. [3 marks]

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Answer: _____

- 3 A town's population fell by 10% one year, then rose by 10% the next, ending at 19 800. Find the starting population and the overall percentage change. [2 marks]

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Answer: _____

- 4 A jacket is priced at \$143, including GST. It is then discounted by 10%. How much GST is included in the discounted price? [3 marks]

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Answer: _____

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

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