Year 9 percentages worksheet

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Name: _____ Date: _____

Question 1

Find:

(a) 15% of $240

(b) 2.5% of $1800

Answer: _____

Question 2

(a) Increase $80 by 15%.

(b) Decrease $250 by 8%.

Answer: _____

Question 3

A shop buys a lamp for $45 and sells it for $72.

(a) Find the profit.

(b) Write the profit as a percentage of the cost price.

Answer: _____

Question 4

Write $18 as a percentage of $75.

Answer: _____

Question 5

The price of a box of strawberries rose from $6.40 to $7.20. Find the percentage increase.

Answer: _____

Question 6

A pair of shoes is marked at $180. In a sale, the price is discounted by 35%. Find the discount and the sale price.

Answer: _____

Question 7

GST in Australia is 10% of the price before GST.

(a) A heater costs $340 before GST. Find the GST and the price including GST.

(b) A jacket costs $198 including GST. Find the price before GST and the amount of GST.

Answer: _____

Question 8

After a 20% discount, a jacket costs $96. What was the original price?

Answer: _____

Question 9

A retailer buys a bike for $240 and marks up the price by 40%. What is the selling price?

Answer: _____

Question 10

Four friends share a holiday house that costs $1250. Ali pays 36% of the cost and the other three share the rest equally. How much does each person pay?

Answer: _____

Year 9 percentages: answers and worked solutions

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Question 1

Key idea: To find a percentage of an amount, write the percentage as a decimal and multiply.

1. (a) 0.15 × 240 = 36 2. (b) 0.025 × 1800 = 45

Answer: (a) $36 (b) $45

Question 2

Key idea: To increase by r%, multiply by (100 + r)%. To decrease by r%, multiply by (100 - r)%.

1. (a) 80 × 1.15 = 92 2. (b) 250 × 0.92 = 230

Answer: (a) $92 (b) $230

Question 3

Key idea: Profit = selling price - cost price. Percentage profit = (profit)/(cost price) × 100%.

1. (a) 72 - 45 = 27 2. (b) 27/45 × 100% = 60%

Answer: (a) $27 (b) 60%

Question 4

Key idea: Write the amounts as a fraction (part over whole), then multiply by 100%.

1. 18/75 × 100% = 1800/75% 2. 1800 ÷ 75 = 24

Answer: 24%

Question 5

Key idea: Percentage change = change/original × 100%.

1. Change: 7.20 - 6.40 = 0.80 2. (0.80)/(6.40) × 100% = 12.5%

Answer: 12.5%

Question 6

Key idea: Discount = discount percentage × marked price. Sale price = marked price - discount.

1. Discount: 0.35 × 180 = 63 2. Sale price: 180 - 63 = 117 (or 0.65 × 180 = 117)

Answer: Discount $63, sale price $117

Question 7

Key idea: The price including GST is 110% of the price before GST, so divide by 1.1 to remove GST.

1. (a) GST = 0.1 × 340 = 34, so the price is 340 + 34 = 374 2. (b) Price before GST = 198 ÷ 1.1 = 180 3. (b) GST = 198 - 180 = 18

Answer: (a) GST $34, price $374 (b) $180 before GST, GST $18

Question 8

Key idea: After a 20% decrease, the new price is 80% of the original, so divide by 0.8.

1. 0.8 × original = 96 2. original = 96 ÷ 0.8 = 120

Answer: $120

Question 9

Key idea: A 40% mark-up means the selling price is 140% of the cost price.

1. Mark-up: 0.4 × 240 = 96 2. Selling price: 240 + 96 = 336

Answer: $336

Question 10

Key idea: Find Ali's share first, then divide what is left by 3.

1. Ali: 0.36 × 1250 = 450 2. Remaining: 1250 - 450 = 800 3. Each of the others: 800 ÷ 3 = 266.666… ≈266.67$

Answer: Ali $450; each of the others $266.67