Year 8 percentages worksheet

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Name: _____ Date: _____

Question 1

Priya sells cars and earns a 4% commission on every sale, plus a weekly base pay of $320. In one week she sells a car for $18 500 and a car for $7 250. How much does Priya earn that week in total?

Answer: _____

Question 2

A jacket has a original price of $120. It is discounted by 35%. What is the sale price?

Answer: _____

Question 3

Hamid buys a second-hand bicycle for $240 and sells it for $300. Find his profit in dollars and express it as a percentage of the cost price.

Answer: _____

Question 4

After a 20% increase, the price of a concert ticket is $66. What was the original price?

Answer: _____

Question 5

Find 35% of 240.

Answer: _____

Question 6

A shopkeeper buys a jacket for $150 and sells it at a 35% mark-up. What is the selling price, in dollars?

Answer: _____

Question 7

A sports store buys a jacket from a supplier for $80. The store marks the price up by 60% to set the retail price. During a sale, the jacket is sold at a 25% discount off the retail price. Does the store make a profit or a loss on the jacket, and by how many dollars?

Answer: _____

Question 8

A jacket is marked at $184 after a 15% increase on its original price. What was the original price of the jacket, in dollars, correct to 2 decimal places?

Answer: _____

Question 9

Write 27 out of 75 as a percentage.

Answer: _____

Question 10

Increase $60 by 20%.

Answer: _____

Year 8 percentages: answers and worked solutions

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Question 1

Key idea: Commission is a percentage of the total sales value. Add base pay separately.

1. Find total sales: 18,500 + 7,250 = 25,750 2. Calculate 4% commission on total sales: 25,750 × 0.04 = 1,030 3. Add base pay: 1,030 + 320 = 1,350

Answer: Priya earns $1 350 that week.

Question 2

Key idea: Multiply the original amount by the percentage kept (as a decimal).

1. A 35% discount means the customer pays 100% - 35% = 65% of the original price. 2. Convert to a decimal: 65% = 0.65 3. Calculate the sale price: 120 × 0.65 = 78

Answer: The sale price is $78.

Question 3

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

1. Find the profit: 300 - 240 = 60 So the profit is $60. 2. Express as a percentage of cost price: 60/240 × 100 = 25

Answer: Hamid makes a profit of $60, which is 25% of the cost price.

Question 4

Key idea: After a 20% increase, the new price equals 120% of the original. Divide by 1.20 to reverse this.

1. A 20% increase means the new price is 100% + 20% = 120% of the original. 2. Write an equation, letting p be the original price in dollars: p × 1.20 = 66 3. Solve for p: p = 66 ÷ 1.20 = 55 4. Check: 55 × 1.20 = 66 ✓

Answer: The original price was $55.

Question 5

Key idea: Change the percentage to a decimal and multiply.

1. 0.35 × 240 = 84

Answer: 84

Question 6

Key idea: Selling price after a percentage mark-up = cost price × (1 + mark-up rate).

1. Write the cost price: $150. 2. Convert the mark-up to a decimal: 35% = 0.35. 3. Multiply to find the mark-up amount: 150 × 0.35 = 52.50, so the mark-up is $52.50. 4. Add to the cost price: 150 + 52.50 = 202.50, so the selling price is $202.50. 5. Check using the multiplier: 150 × 1.35 = 202.50 ✓

Answer: $202.50

Question 7

Key idea: Apply the mark-up to find the retail price, then apply the discount to find the selling price, then compare to the cost price.

1. Find the retail price after a 60% mark-up: 80 × 1.60 = 128 The retail price is $128. 2. Find the selling price after a 25% discount: 128 × 0.75 = 96 The selling price is $96. 3. Compare to the cost price: 96 - 80 = 16 The selling price is greater than the cost price.

Answer: The store makes a profit of $16.

Question 8

Key idea: A percentage increase of 15% means the new price equals the original multiplied by 1.15, so reverse the process by dividing.

1. Write the relationship: new price = original × 1.15 2. Substitute the known value: 184 = original × 1.15 3. Solve for the original: original = (184)/(1.15) 4. Calculate: (184)/(1.15) = 160 5. Check: 160 × 1.15 = 184 ✓

Answer: $160.00

Question 9

Key idea: Write as a fraction and multiply by 100%.

1. 27/75 × 100% = 36%

Answer: 36%

Question 10

Answer: $72 (60 × 1.2)