Percentages and money topic test

15 questions | 43 marks | 45 minutes

A progressive by-hand paper covering percentage conversions, shares, discounts, budgets and practical models.

Equivalent correct methods earn the corresponding marks.

1. Write 35% as a decimal and simplified fraction. [2 marks]

$35\% = \frac{35}{100} = \frac{7}{20}$.

Answer: $0.35 = \frac{7}{20}$

2. Write 0.125 as a percentage. [1 mark]

Multiply by 100 to express the share per hundred.

Answer: 12.5%

3. Find 40% of 65. [2 marks]

10 percent is 6.5, so 40 percent is 4 times 6.5.

Answer: 26

4. Find 7% of 300 dollars. [2 marks]

One percent is 3 dollars; seven percent is 21 dollars.

Answer: 21 dollars

5. A group has 35 students. Twenty-one take the bus. What percentage take the bus? [2 marks]

$\frac{21}{35} = \frac{3}{5} = 60\%$.

Answer: 60%

6. What percentage of 2.40 dollars is 36 cents? [3 marks]

2.40 dollars = 240 cents.

$\frac{36}{240} \times 100\% = 15\%$.

Answer: 15%

7. A 96-dollar pair of shoes has 25% off. Find the price paid. [2 marks]

Saving is one quarter of 96, or 24 dollars.

96 - 24 = 72 dollars.

Answer: 72 dollars

8. An item costs 120 dollars before a 15% discount. Find the saving and sale price. [3 marks]

Ten percent is 12 dollars and five percent is 6 dollars.

Saving = 18 dollars; price = 120 - 18 = 102 dollars.

Answer: Saving: 18 dollars; sale price: 102 dollars.

9. Shop A sells a 75-dollar bag with 20% off. Shop B sells the same bag for 62 dollars. Which is cheaper, and by how much? [3 marks]

A saves 15 dollars, so it costs 60 dollars.

62 - 60 = 2 dollars.

Answer: Shop A by 2 dollars.

10. From 90 dollars, buy 8 pens at 4.25 dollars each and 6 notebooks at 3.50 dollars each. How much remains? [3 marks]

Pens cost 34 dollars; notebooks cost 21 dollars.

Total = 55 dollars; 90 - 55 = 35 dollars.

Answer: 35 dollars

11. Which is largest: $\frac{7}{8}$, 0.86 or 85%? Explain. [2 marks]

They equal 87.5%, 86% and 85%.

Answer: $\frac{7}{8}$

12. Shop C offers 20% off an 80-dollar jacket. Shop D offers 10% off the same jacket, marked at 70 dollars. A student says C must be cheaper because its discount is larger. Is the student correct? [4 marks]

C saves 16 dollars: 80 - 16 = 64 dollars.

D saves 7 dollars: 70 - 7 = 63 dollars.

Final prices, not percentages alone, determine the cheaper offer.

Answer: No. D costs 63 dollars, while C costs 64 dollars.

13. An art order has a 90-dollar item discounted by 20%. Delivery costs 8 dollars. The budget is 100 dollars. [4 marks]

(a) Find the total cost, including delivery. [2 marks]

Saving = 18 dollars; item price = 72 dollars.

72 + 8 = 80 dollars.

Answer: 80 dollars

(b) Find the money left. [2 marks]

100 - 80 = 20 dollars.

Answer: 20 dollars

14. A venue charges a fixed 24 dollars plus 3 dollars per person. The budget is 90 dollars. Assume there is enough space. [4 marks]

(a) Find the largest affordable number of people. [3 marks]

66 divided by 3 = 22 people.

Check: 24 + 3 times 22 = 90 dollars.

Answer: 22 people

(b) State one assumption about the price model. [1 mark]

Other relevant price or capacity assumptions are acceptable.

Answer: For example: no extra fees and the 3-dollar price applies to every person.

15. A stall sells 20 items for 2.80 dollars each. Materials cost 1.20 dollars per item, and setup costs 8 dollars once. [6 marks]

(a) Find the income. [1 mark]

20 times 2.80 = 56 dollars.

Answer: 56 dollars

(b) Find the total cost. [2 marks]

Materials cost 20 times 1.20 = 24 dollars.

Add the fixed setup fee: 24 + 8 = 32 dollars.

Answer: 32 dollars

(c) Mia predicts a surplus of 32 dollars by multiplying 20 by 1.60. Explain her mistake and find the correct surplus. [3 marks]

The 1.60 dollars per item is the selling price minus material cost.

Subtract the fixed fee as well: 32 - 8 = 24 dollars.

Answer: She omitted the setup fee. The surplus is 24 dollars.