

Percentages

Fractions, Decimals & % · Grade 6

Score: _____ / 13

★ Hard · 13 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

1. A jacket costs \$180 after a 25% increase.
What was the original price?

Answer: _____

2. A value decreases by 20%, then increases by 20%.
Is the final value the same as the original? Explain.

Answer: _____

3. A product's price increases by 10% each year.
Starting at \$200, what is the price after 3 years?

Answer: _____

4. In a class, 60% are girls. There are 18 girls.
How many students are in the class?

Answer: _____

5. A shirt costs \$48. The store marks it up 25% to set the retail price.
A customer uses a 10% coupon on the retail price.
What do they pay?

Answer: _____

6. Scores on two tests: $36/45$ and $52/65$.

Which score is a higher percentage?

Answer: _____

7. A car's value depreciates 15% per year.

If it starts at \$20,000, what is it worth after 2 years?

Answer: _____

8. 35% of a class chose art and 40% chose music.

The rest chose drama. There are 40 students.

How many chose drama?

Answer: _____

9. What percentage of 2.5 is 0.75?

Answer: _____

10. A number is increased by 40% and the result is 84.
Find the original number.

Answer: _____

11. Two stores sell the same TV.
Store A: \$500 with 20% off.
Store B: \$480 with 15% off.
Which is cheaper, and by how much?

Answer: _____

12. A survey shows:

40% prefer football

35% prefer basketball

The rest prefer tennis.

If 150 people prefer tennis, how many were surveyed?

Answer: _____

13. After a 12% pay rise, an employee earns \$2,800 per month.

What was their salary before the rise?

Answer: _____

Answer Key

Percentages — Hard

1. \$144

After 25% increase: $125\% = \$180$. Original = $180 \div 1.25 = \$144$.

2. No. Start: 100. After -20%: 80. After +20% of 80: 80+16=96. Final is 96% of original.

% increase/decrease are applied to different bases. -20% then +20% gives $\times 0.8 \times 1.2 = 0.96$, so 4% less.

3. \$266.20

Year 1: $200 \times 1.1 = 220$. Year 2: $220 \times 1.1 = 242$. Year 3: $242 \times 1.1 = 266.20$.

4. 30

$60\% = 18$. Total = $18 \div 0.6 = 30$.

5. \$54

Retail: $48 \times 1.25 = \$60$. After 10% off: $60 \times 0.9 = \$54$.

6. They are equal — both are 80%.

$36/45 = 0.8 = 80\%$. $52/65 = 0.8 = 80\%$.

7. \$14,450

Year 1: $20,000 \times 0.85 = 17,000$. Year 2: $17,000 \times 0.85 = 14,450$.

8. 10 students

Drama %: $100 - 35 - 40 = 25\%$. $25\% \times 40 = 10$ students.

9. 30%

$0.75/2.5 = 0.3 = 30\%$.

10. 60

$140\% \times n = 84$. $n = 84 \div 1.4 = 60$.

- 11. Store A: \$400. Store B: \$408. Store A is cheaper by \$8.**

A: $500 \times 0.8 = \$400$. B: $480 \times 0.85 = \$408$. A is cheaper by \$8.

- 12. 600 people**

Tennis %: $100 - 40 - 35 = 25\%$. $25\% = 150$. Total = $150 \div 0.25 = 600$.

- 13. \$2,500**

$112\% = 2,800$. Original = $2,800 \div 1.12 = 2,500$.
