

1. Express the ratio 12:16 in its simplest form:

The ratio 12:16 simplified is 3:4.

2. Divide \$120 in the ratio 2:3:

Total parts = $2 + 3 = 5$.

Share for 2 = $(2/5) \times 120 = \$48$.

Share for 3 = $(3/5) \times 120 = \$72$.

3. The ratio of cats to dogs is 4:7. If there are 28 dogs, how many cats are there?

7 parts = 28 dogs ? 1 part = $28 \div 7 = 4$.

Number of cats = $4 \times 4 = 16$ cats.

4. If a person earns \$240 for 8 hours, what is the rate per hour?

Rate per hour = $240 \div 8 = \$30$ per hour.

5. Are the ratios 6:9 and 8:12 proportional?

$6/9 = 2/3$, $8/12 = 2/3$? since both are equal, yes, they are proportional.

6. If 3 shirts cost \$45, how much do 5 shirts cost?

Cost per shirt = $45 \div 3 = \$15$.

Cost for 5 shirts = $5 \times 15 = \$75$.

7. If 5 pens cost \$10, how much do 12 pens cost?

Cost per pen = $10 \div 5 = \$2$.

Cost for 12 pens = $12 \times 2 = \$24$.

8. A class has 18 boys and 12 girls. What is the ratio of boys to total students?

Total students = $18 + 12 = 30$.

Ratio = $18:30 = 3:5$.

9. Find 25% of 480:

$25\% \times 480 = 0.25 \times 480 = 120$.

10. A jacket is sold for \$150 after a 20% discount. What was the original price?

Original price = x.

80% of x = 150 ? $x = 150 \div 0.8 = \$187.50$.

11. A salesperson earns 5% commission on \$2,000 sales. How much commission?

Commission = $0.05 \times 2000 = \$100$.

12. If 60% of a number is 180, what is the original number?

$0.6 \times \text{number} = 180$? $\text{number} = 180 \div 0.6 = 300$.

13. Find simple interest on \$1,200 at 5% for 3 years:

$$I = 1200 \times 5 \times 3 \div 100 = \$180.$$

14. \$2,000 invested at 10% for 3 years compounded annually. Find total amount:

$$A = 2000(1 + 0.10)^3 = 2000 \times 1.331 = \$2,662.$$

15. A loan of \$2,000 at 6% for 2 years. Total amount to be repaid?

$$I = 2000 \times 6 \times 2 \div 100 = \$240.$$

$$\text{Total} = 2000 + 240 = \$2,240.$$