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1. What is the simplest form of the ratio 12 to 16?

To simplify, divide both numbers by their greatest common factor which is 4.
So, $12 \div 4 = 3$ and $16 \div 4 = 4$. Final answer: 3:4

2. Share $120 in the ratio 2 to 3.

Total parts = 2 + 3 = 5
Each part = $120 \div 5 = \$24$
So, shares are: $2 \times 24 = \$48$ and $3 \times 24 = \$72$

3. There are 28 dogs in a pet shop with a 4:7 cat-to-dog ratio. How many cats are there?

7 parts represent 28 dogs ? 1 part = 4
Cats = $4 \times 4 = 16$

4. What is the hourly rate if someone earns $240 for 8 hours of work?

$\$240 \div 8 = \$30$/hour

5. Check if the ratios 6:9 and 8:12 are equivalent.

$6 \div 9 = 0.666…$, $8 \div 12 = 0.666…$? Yes, the ratios are proportional.

6. If 3 shirts cost $45, what is the cost of 5 shirts?

Each shirt = $45 \div 3 = \$15$? $5 \times 15 = \$75$

7. What would 12 pens cost if 5 pens are $10?

Cost per pen = $2 ? $12 \times 2 = \$24$

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

Total = 30 ? Ratio = 18:30 = simplified to 3:5

9. Calculate 25 percent of 480.

$0.25 \times 480 = 120$

10. A jacket costs $150 after a 20% discount. What was the price before the discount?

Let original be x: $0.8x = 150$? $x = 150 \div 0.8 = \$187.50$

11. What is 5% commission on a $2000 sale?

$5\% \times 2000 = \$100$

12. If 60% of a number equals 180, find the number.

$0.6x = 180$? $x = 180 \div 0.6 = 300$

13. How much simple interest will $1200 earn at 5% per year over 3 years?

SI = (1200 × 5 × 3)/100 = $180

14. Find the compound amount after investing $2000 at 10% interest for 3 years.

A = 2000 × (1.1)^3 = 2000 × 1.331 = $2,662

15. Determine the repayment on a $2000 loan over 2 years at 6% simple interest.

SI = (2000 × 6 × 2)/100 = $240 ? Total repayment = 2000 + 240 = $2,240