Assignment of math's methods

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Express the ratio 12:16 in its simplest form

Step 1: Find GCD of 12 and 16 = 4
Step 2: Divide both terms by 4
$12 \div 4 = 3$, $16 \div 4 = 4$
Answer: 3:4

Divide $120 in the ratio 2:3

Step 1: Total parts = 2 + 3 = 5
Step 2: $120 ÷ 5 = $24 per part
Step 3: 2 parts = 2 × 24 = $48, 3 parts = 3 × 24 = $72
Answer: $48 and $72

The ratio of cats to dogs in a pet shop is 4:7. If there are 28 dogs, how many cats are there?

Step 1: Let cats be x. Set up proportion: 4/7 = x/28
Step 2: Cross-multiply: 7x = 4 × 28 = 112
Step 3: x = 112 ÷ 7 = 16
Answer: 16 cats

If a person earns $240 for working 8 hours, what is the rate of pay per hour?

Step 1: Divide total pay by hours: $240 ÷ 8
Answer: $30 per hour

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

Step 1: Simplify both ratios: 6/9 = 2/3, 8/12 = 2/3
Answer: Yes, they are proportional

If 3 shirts cost $45, how much would 5 shirts cost at the same rate?

Step 1: Cost per shirt = $45 ÷ 3 = $15
Step 2: 5 shirts = 5 × $15 = $75

Answer: $75

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

Step 1: Cost per pen = $10 ÷ 5 = $2
Step 2: 12 pens = 12 × $2 = $24
Answer: $24

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

Step 1: Total students = 18 + 12 = 30
Step 2: Ratio = 18:30 = 3:5 (after dividing by 6)
Answer: 3:5

Find 25% of 480

Step 1: 25% = 25 ÷ 100 = 0.25
Step 2: 0.25 × 480 = 120
Answer: 120

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

Step 1: Let original price be x
Step 2: x - 0.2x = 150 ? 0.8x = 150
Step 3: x = 150 ÷ 0.8 = 187.5
Answer: $187.50

A salesperson earns a 5% commission on sales. If they sell goods worth $2,000, how much commission do they earn?

Step 1: 5% of 2000 = (5 ÷ 100) × 2000 = 100
Answer: $100

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

Step 1: Let the number be x ? 0.6x = 180
Step 2: x = 180 ÷ 0.6 = 300
Answer: 300

Find the simple interest on $1,200 at a rate of 5% per annum for 3 years

Step 1: SI = (P × R × T) ÷ 100
SI = (1200 × 5 × 3) ÷ 100 = 180
Answer: $180

A sum of $2,000 is invested at 10% per annum for 3 years compounded annually. Find the total amount.

Step 1: A = P(1 + r)^t = 2000(1.10)^3 = 2000 × 1.331 = 2662
Answer: $2,662

A loan of $2,000 is given for 2 years at a rate of 6% per annum. What is the total amount to be repaid at the end of the period?

Step 1: SI = (P × R × T) ÷ 100 = (2000 × 6 × 2) ÷ 100 = 240
Step 2: Total repayment = 2000 + 240 = 2240
Answer: $2,240