ALPHA UNIVERSITY BORAMA

Assignment of math's methods

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Express the ratio 12:16 in its simplest form

?

Divide $120 in the ratio 2:3.

Solution

Total parts = 2 + 3 = 5

120 ÷ 5 = 24

2 parts = 24 × 2 = $48

3 parts = 24 × 3 = $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?

Solution

7 parts = 28 ? 1 part = 4

4 parts = 4 × 4 = 16 cats

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

Solution

$240 ÷ 8 = $30 per hour

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

Solution

Step 1: Simplify both ratios.
6:9 simplifies to (divide both by 3)=2:3, and

8:12 simplifies to (divide both by 4)=2:3
Since both simplified ratios are equal, they are proportional.

6:9 = 2:3

8:12 = 2:3
The Answer is Yes, they are proportional.

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

Solution

1 shirt = $45 ÷ 3 = $15

5 shirts = 5 × $15 = $75

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

?

Solution

1 pen = $10 ÷ 5 = $2

12 pens = 12 × $2 = $24

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

Solution

Step 1: Total students = 18 + 12 = 30.
Step 2: Ratio = boys : total = 18 : 30.
Step 3: Simplify ratio: 18 ÷ 6 = 3, 30 ÷ 6 = 5
so the ratio is : 3:5

Find 25% of 480.

Solution

25% × 480 = 0.25 × 480 = 120

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

Solution

Let original price = x

After 20% discount: x - 0.2x = $150 ? 0.8x = $150 ? x = $150 ÷ 0.8 = $187.50

the original price =187.50

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

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

Let the number be x. 60% of x is written as 0.6x = 180
Solve: x = 180 ÷ 0.6 = 300.
Final Answer: 300

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

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

Solution

Formula: of compound interest

A = P(1 + r)^t

P = 2000

r = 10% = 0.10

t = 3 years

A = 2000(1 + 0.10)^3 = 2000 × (1.1)^3 = 2000 × 1.331 = $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?

Solution

SI = (P × R × T) / 100

P = 2000

R = 6%

T = 2 years

SI = (2000 × 6 × 2)/100 = $240

Total = 2000 + 240 = $2,240