Answers

To simplify the ratio 12:16, divide both numbers by their greatest common divisor (GCD).

The GCD of 12 and 16 is

Now divide both numbers by

•

12 ÷ 4 = 3

•

16 ÷ 4 = 4

Simplest form: 3:4.

To divide $120 in the ratio 2:3:

Add the parts of the ratio:

2 + 3 = 5 parts total

Find the value of one part:

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First part (2 parts): 2 × $24 = $48

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Second part (3 parts): 3 × $24 = $72

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Answer:

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First share: $48

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Second share: $72

The ratio of cats to dogs is 4:7, and there are 28 dogs.

1.

In the ratio, 7 parts = 28 dogs

2.

Find the value of one part:

28 ÷ 7 = 4

3.

Now calculate the number of cats (4 parts):

4 × 4 = 16 cats

Answer: There are 16 cats.

To find the rate of pay per hour:

\text{Rate per hour} = \frac{\text{Total pay}}{\text{Total hours}} = \frac{240}{8} = 30

Answer: $30 per hour.

To check if the ratios 6:9 and 8:12 are proportional, simplify both ratios:

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6:9 ? divide both by 3 ? 2:3

•

8:12 ? divide both by 4 ? 2:3

Since both simplify to 2:3, yes, the ratios are proportional.

If 3 shirts cost $45, first find the cost per shirt:

$\frac{45}{3} = 15 \text{ dollars per shirt}$

Now multiply by 5:

$5 \times 15 = 75$

Answer: 5 shirts would cost $75.

If 5 pens cost $10, first find the cost per pen:

$\frac{10}{5} = 2 \text{ dollars per pen}$

Now calculate the cost of 12 pens:

$12 \times 2 = 24$

Answer: 12 pens would cost $24.

The class has:

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18 boys

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12 girls

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Total students = 18 + 12 = 30

So, the ratio of boys to total students is:

$\frac{18}{30} = \frac{3}{5}$

Answer: The ratio is 3:5.

To find 25% of 480:

$25\% \times 480 = \frac{25}{100} \times 480 = \frac{1}{4} \times 480 = 120$

Answer: 25% of 480 is 120.

A 20% discount means the jacket was sold for 80% of the original price:

$0.8x = 150$

Now solve for x:

$x = \frac{150}{0.8} = 187.50$

Answer: The original price was $187.50.

To calculate 5% commission on $2,000:

$\frac{5}{100} \times 2000 = 0.05 \times 2000 = 100$

Answer:

The salesperson earns $100 in commission.

Given:

$60\% \text{ of } x = 180$

$\Rightarrow 0.6x = 180$

Now solve for x:

$x = \frac{180}{0.6} = 300$

Answer: The original number is 300.

To calculate simple interest, use the formula:

$\text{Simple Interest (SI)} = \frac{P \times R \times T}{100}$

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re:

- P = 1200 (principal)
- R = 5\% (rate)
- T = 3 years

$\text{SI} = \frac{1200 \times 5 \times 3}{100} = \frac{18000}{100} = 180$

Answer: The simple interest is $180.

To calculate compound interest and the total amount, use the formula:

$A = P \left(1 + \frac{r}{100}\right)^t$

Where:

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P = 2000 (principal)

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r = 10\% (rate)

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t = 3 years

A = 2000 \left(1 + \frac{10}{100}\right)^3 = 2000 \times (1.1)^3

A = 2000 \times 1.331 = 2662

Answer: The total amount after 3 years is $2,662.

To find the total amount to be repaid, we first calculate the simple interest using the formula:

\text{SI} = \frac{P \times R \times T}{100}

Where:

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P = 2000

•

R = 6\%

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T = 2 years

\text{SI} = \frac{2000 \times 6 \times 2}{100} = \frac{24000}{100} = 240

Now add the interest to the principal:

text{Total amount} = 2000 + 240 = 2240

Answer: The total amount to be repaid is $2,240.