



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.

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

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

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

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

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

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

Find 25% of 480.

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

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?

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.

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?



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Answers

Divide both numbers by 4,

$$12 / 4 = 3$$

$$16 / 4 = 4$$

Therefore, the simplest form of the ratio 12:16 is **3:4**.

To divide \$120 in the ratio 2:3

First

find the tota

1 number of parts in the ratio,

$$2 + 3 = 5.$$

Second find the value of one part by dividing the total amount by the total number of parts: $\$120 / 5 = \24 .

Third

now

I can find the value of each part of the ratio:

2 parts ratios: $2 \times$

$$24 = \$48$$

3 parts ratios : $3 \times$

$$24 = \$72$$

So, \$120 divided in the ratio 2:3 is \$48 and \$72.

The ratio of cats are 4 and dogs are 7

So there are 16 cats in pet shop

To calculate the rate of person take per hour

Y

es, the ratios

6:9

and

8:12

are proportional

To know the cost of the 5 shirts when 3 shirts is 45\$

First calculate the price of per shirt = $\$ 45/3 = \$ 15$

Therefore the cost of 5 shirts = $5 * \$ 15 = \$ 75$

To determine the cost of the 12 pens when 5 pens price are 10\$

First calculate t

he price of per shirt = \$ $10/5 = \$ 2$

So the cost of 12 pens = $12 * \$ 2 = \$ 24$

The total number of boys and girls in the class is $18 \text{ boys} + 12 \text{ girls} = 30$

The ratio of boys to the total number of students is 18:30

So divide the both sides 6

So the ratio of boys to the total number students 3:5

25% same as one quarter

20% discount ($100\% - 20\% = 80\%$) the jacket was sold 80% of the original price

80% divide by 100 = 0.8

Price sold after discount = \$150

So divide $\$150 / 0.8 = \187.5

the original price of the jacket before the discount was \$187.5

Find 5% of \$2,000.

$$5\% / 100 = 0.05.$$

So, the commission earned is $0.05 * \$2,000 = \100 .

Therefore, the salesperson earns a commission of \$100.

Let be x the original number so 60% of x equal to 180

$$60\% \text{ divide by } 100 = 0.6$$

$$\text{So } x = 180 / 0.6 = 300$$

the original number is 300

the simple interest calculation

$$\text{principal (P)} = 1200$$

$$\text{Rate (R)} = 5\% = 0.05$$

$$\text{Time (T)} = 3 \text{ years}$$

compound interest for total amount

Year	Amount at beginning of year	Compound interest	Amount of the end year
1	2000	$10\% * 2000 = 200$	$2000 + 200 = 2200$
2	2200	$10\% * 2200 = 220$	$2200 + 220 = 2420$

3	2420	$10\% * 2420 = 242$	$2420 + 242 = 2662$
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$2000 * 1.331 = 2662$ so the total amount of 3 years is \$ 2662

the total amount to be repaid at the end of the period

year	Simple interest	Amount at the end of the year
1	$\$2,000 * 0.06 = 120$	$\$2000 + 120 = 2120$
2	$\$2,000 * 0.06 = 120$	$\$2120 + 120 = 2240$