



ALPHA UNIVERSITY BORAMA

Assignment of math's methods

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The assignment

Individual assailment the assignment **30 marks**

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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?

Answer to All questions

1) . Simplify 12:16

Formula: Divide both by GCD

GCD of 12 and 16 = 4

$$12 \div 4 : 16 \div 4 =$$

3:4

2) . Divide \$120 in ratio 2:3

Formula:

$$\text{Total parts} = 2 + 3 = 5$$

$$\text{One part} = 120 \div 5 = 24$$

$$2 \text{ parts} = 2 \times 24 = \$48$$

$$3 \text{ parts} = 3 \times 24 =$$

\$72

3) . Cats to dogs = 4:7, Dogs = 28

Formula:

$$7 \text{ parts} = 28 \text{ ? } 1 \text{ part} = 28 \div 7 = 4$$

$$\text{Cats} = 4 \times 4 =$$

16 cats

4) . \$240 for 8 hours ? rate per hour

Formula:

$$\text{Rate} = \text{Total Pay} \div \text{Hours}$$

$$240 \div 8 =$$

\$30/hour

5) . Are 6:9 and 8:12 proportional?

Formula:

$$6 \div 9 = 0.666..., 8 \div 12 =$$

0.666.

..

In simple their ratio is 2 to 3 which is

0.6667

Since equal the answer is ? Yes

6) . 3 shirts = \$45 ? 5 shirts = ?

Formula:

$$\text{Unit price} = 45 \div 3 = 15$$

$$\text{Cost for 5} = 15 \times 5 =$$

\$75

7) . 5 pens = \$10 ? 12 pens = ?

Formula:

$$\text{Unit price} = 10 \div 5 = 2$$

$$12 \text{ pens} = 12 \times 2 =$$

\$24

8) . 18 boys, 12 girls ? boys to total

Formula:

$$\text{Total} = 18 + 12 = 30$$

$$\text{Ratio} = 18:30 = \text{divide by 6 ?}$$

3:5

9) . Find 25% of 480

Formula:

$$25\% \times 480 = (25/100) \times 480 =$$

120

10) . \$150 after 20% discount ? original price

Formula:

$$80\% \text{ of price} = 150 ? 0.8x = 150$$

$$x = 150 \div 0.8 =$$

\$187.50

11) . 5% commission on \$2,000

Formula:

$$\text{Commission} = (5/100) \times 2000 =$$

\$100

12) . 60% of number = 180 ? original number

Formula:

$$0.6x = 180 \text{ ? } x = 180 \div 0.6 =$$

300

13) . Simple Interest: \$1,200 at 5% for 3 years

Formula:

$$SI = (P \times R \times T)/100$$

$$SI = (1200 \times 5 \times 3)/100 =$$

\$180

14) . Compound Interest: \$2,000 at 10% for 3 years

Formula:

$$A = P(1 + R/100)^T$$

$$A = 2000(1 + 0.1)^3 = 2000 \times 1.331 =$$

\$2,662

15) . Simple Interest: \$2,000 at 6% for 2 years

Formula:

$$SI = (P \times R \times T)/100 = (2000 \times 6 \times 2)/100 = 240$$

$$\text{Total} = P + I = 2000 + 240 =$$

\$2,240