



**ALPHA UNIVERSITY BORAMA**

### **Assignment of math's methods**

**Name: ..... faculty..... ID.....**

#### **The assignment**

**Individual assignment the assignment 30 marks**

**Submission date 05-05-2025**

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?

**Solution :**

**12:16**

**3:4**

**Total ratio=2+3=5**

The ratio of one part =  $\$120 \div 5 = \$24$

The ratio of 3 =  $24 \times 3 = \$72$

The ratio of 2 =  $24 \times 2 = \$48$ .

**3.** Given : number of dogs = 28, ratio of cats to the dogs = 4:7

Let x number of cats,  $x/28 = 4/7$

$7x = 112$ ,  $x = 16$

Therefore the number of cats are 16 in pet shop .

The person earn \$30 per hour.

By dividing  $\$240 \div 8 = \$30$ .

**5.** to know if the ratio is proportional

we compare the two ratio then,

$$6:9, 8:12$$

$$2:3, 2:3$$

Therefore if the simplified ratio equals ,the ratio are proportional .

**6.** let X for shirt.

$$\text{If } 3x = \$45$$

$$X = \$15$$

$$\text{So } 5x = 5 \times 15 = \$75$$

$$\text{Therefore : } 5\text{shirts} = \$75$$

**8.** Given : Boys=18

$$\text{Grils} = 12$$

$$\text{Total} = 30$$

The ratio of boys to the total number = 18:30

Simplify : 3: 5

**9.**  $25\% \text{ of } 480 = 120$

**10.** 20% discount means Jacket sold out 80%, so  $80\%x = 150$

$x = \$187.5$

And the original price is \$187.5.

**11.** given that ,Commission rate =5%, Amount of sales = \$2000

Commission =rate of commission  $\times$  Amount of sales

Commission = $5\% \times \$2000 = \$100$ .

Simple

intrest

=PRT,

Given :

Principle (P)=\$2000, Rate(R)=10%

Given :

P= \$2000, t=2

years ,

r=6%, Total amount of

repaid ?

