**ALPHA UNIVERSITY BORAMA**

**Assignment of math’s methods**

**Name: …………………………………… faculty………… ID………**

**The assignment**

**Individual assailment the assignment 30 marks**

**Submission date 05-05-2025**

1. Express the ratio 12:16 in its simplest form.
2. Divide $120 in the ratio 2:3.
3. The ratio of cats to dogs in a pet shop is 4:7. If there are 28 dogs, how many cats are there?
4. If a person earns $240 for working 8 hours, what is the rate of pay per hour?
5. Are the ratios 6:9 and 8:12 proportional?
6. If 3 shirts cost $45, how much would 5 shirts cost at the same rate?
7. If 5 pens cost $10, how much do 12 pens cost?
8. A class has 18 boys and 12 girls. What is the ratio of boys to the total number of students?
9. Find 25% of 480.
10. A jacket is sold for $150 after a 20% discount. What was the original price?
11. A salesperson earns a 5% commission on sales. If they sell goods worth $2,000, how much commission do they earn?
12. If 60% of a number is 180, what is the original number?
13. Find the simple interest on $1,200 at a rate of 5% per annum for 3 years.
14. A sum of $2,000 is invested at 10% per annum for 3 years compounded annually. Find the total amount.
15. 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 :**

1. **12:16**

**3:4**

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

The ratio of one part =$120÷5=$24

The ratio of 3= 24×3=$72

The ratio of 2= 24×2=$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 .

**4**.If the person earns $240 for working 8 Hrs ,

The person earn $30 per hour.

By dividing $240÷8 =$30.

**5.** to known 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.

If 3x=$45

X= $15

So 5x=5×15=$75

Therefore : 5shirts=$75

**7.** let x for pen, if 5x=$10 , x=$2

Therefore 12x=12×$2= $24.

12pens cost=$24

**8.** Given : Boys=18

Grils=12

Total =30

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

Simplify : 3: 5

**9.** 25%0f 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 ×Amount of sales

Commission =5%×$2000=$100.

**12**. let x the unknown number .

60%x= 180

X=180÷0.6

X= 300

Therefre the original number is 300.

1. Simple intrest =PRT,

P= $1200

R= 5%

t= 3 years

SI= $1200×5%×3yrs= $180.

1. Given : Principle (P)=$2000, Rate(R)=10%

T=3Years

A? A=P(1+r/100) t

A=$2000(1+10%/100)3, A=$20006.006

1. Given : P= $2000, t=2years , r=6%, Total amount of repaid ?

Total amount of repaid = P+Simple interest

SI= PRT

SI=$2000×0.06×2= $240

Total amount of repaid at the end of 2 years= $2000+$240=$2240.