ALPHA UNIVERSITY BORAMA

**Assignment of math’s methods**

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**The assignment**

**Individual assailment the assignment 30 marks**

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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?

**ANSWERS**

1. Simplify 12:16

= 3:4

2. Divide $120 in the ratio 2:3

Total parts = 2 + 3 = 5

Each part = $120 ÷ 5 = $24

So, 2 parts = $48, 3 parts = $72

Answer: $48 and $72

3. Ratio of cats to dogs is 4:7, dogs = 28

7 parts = 28 → 1 part = 4

Cats = 4 × 4 = 16

Answer: 16 cats

4. Earns $240 for 8 hours → pay per hour

$240 ÷ 8 = $30

Answer: $30/hour

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

6 ÷ 9 = 2/3; 8 ÷ 12 = 2/3

Yes, they are proportional.

6. 3 shirts = $45 → 5 shirts = ?

$45 ÷ 3 = $15 per shirt

5 × $15 = $75

Answer: $75

7. 5 pens = $10 → 12 pens = ?

$10 ÷ 5 = $2 per pen

12 × $2 = $24

Answer: $24

8. Ratio of boys to total: 18 boys, 12 girls = 30 total

Ratio = 18:30 = 3:5

Answer: 3:5

9. Find 25% of 480

0.25 × 480 = 120

Answer: 120

10. $150 after 20% discount Original price?

Let original = x → x - 0.2x = 150 → 0.8x = 150 → x = 150 ÷ 0.8 = $187.50

Answer: $187.50

11. 5% of $2,000 = 0.05 × 2000 = $100

Answer: $100

12. 60% of number = 180 → 0.6x = 180 → x = 180 ÷ 0.6 = 300

Answer: 300

13. Simple interest on $1,200 at 5% for 3 years

SI = P × R × T / 100 = 1200 × 5 × 3 ÷ 100 = $180

Answer: $180

14. Compound interest on $2000, 10%, 3 years

A = P(1 + r)t = 2000 × (1 + 0.10)3 = 2000 × 1.331 = $2662

Answer: $2662

15. Loan of $2000 at 6% for 2 years. compound interest

A = 2000 × (1 + 0.06)2 = 2000 × 1.1236 = $2247.20

Answer: $2247.20