**ALPHA UNIVERSITY BORAMA**

**Assignment of math’s methods**

**Name: MAXAMUD JAAMAC MAXAMED. Faculty: PROJECT MANAGEMENT ID:** *567*

**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?

**ANSWER**

1. **Simplify 12:16**

**= Simplest form: 3:4**

1. **Divide $120 in the ratio 2:3**

**Total parts = 2 + 3 = 5**

**Each part = 120 ÷ 5 = $24**

**So, 2 parts = 2 × 24 = $48**

**3 parts = 3 × 24 = $72**

1. **Cats to dogs = 4:7, Dogs = 28**

**1 part = 28 ÷ 7 = 4**

**Cats = 4 × 4 = 16**

1. **$240 for 8 hours**

**Rate = 240 ÷ 8 = $30/hour**

1. **Are 6:9 and 8:12 proportional?**

**Simplify: 6:9 = 2:3, 8:12 = 2:3**

**Yes, they are proportional.**

1. **3 shirts = $45, 1 shirt = 45 ÷ 3 = $15**

**5 shirts = 5 × 15 = $75**

1. **5 pens = $10, 1 pen = 10 ÷ 5 = $2**

**12 pens = 12 × 2 = $24**

1. **18 boys, 12 girls → Total = 30 students**

**Boys to total = 18:30 = 3:5**

1. **25% of 480 = 0.25 × 480 = 120**
2. **$150 after 20% discount**

**Let original = x**

**80% of x = 150 → 0.8x = 150**

**X = 150 ÷ 0.8 = $187.50**

1. **5% of $2,000 = 0.05 × 2000 = $100**
2. **60% of a number = 180**

**Let number = x**

**0.6x = 180 → x = 180 ÷ 0.6 = 300**

1. **Simple Interest = P × R × T ÷ 100**

**= 1200 × 5 × 3 ÷ 100 = $180**

1. **Compound interest: A = P(1 + r/100)^t**

**A = 2000(1 + 10/100)^3 = 2000(1.1)^3**

**= 2000 × 1.331 = $2662**

1. **Simple Interest = 2000 × 6 × 2 ÷ 100 = 240**

**Total repayment = 2000 + 240 = $2240**

**DHAMAD**