**ALPHA UNIVERSITY BORAMA**

**Assignment of math's methods**

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**The assignment**

**individual assignment the assignment ...30 marks submission date 05/05/2025**

**1. Express the ratio 12:16 in its simplest form**

**⇒ 12:16 = 3:4**

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

**⇒ $120 ÷ (2+3) = $24 per part**

**⇒ 2 parts = $48, 3 parts = $72**

**Answer: $48 and $72**

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

**⇒ 1 part = 28 ÷ 7 = 4**

**⇒ Cats = 4 × 4 = 16 cats**

**4. $240 for 8 hours, rate per hour**

**⇒ $240 ÷ 8 = $30 per hour**

**5. Are the ratios 6:9 and 8:12 proportional?**

**⇒ 6/9 = 2/3; 8/12 = 2/3**

**Yes, they are proportional**

**6. 3 shirts cost $45, so 5 shirts cost?**

**⇒ 1 shirt = $15; 5 shirts = 5 × $15 = $75**

**7. 5 pens cost $10, 12 pens cost?**

**⇒ 1 pen = $2; 12 pens = 12 × $2 = $24**

**8. Class: 18 boys, 12 girls ⇒ Total = 30**

**⇒ Ratio of boys to total = 18:30 = 3:5**

**9. Find 25% of 480**

**⇒ 0.25 × 480 = 120**

**10. Jacket sold for $150 after 20% discount**

**⇒ Let original price = x**

**⇒ x - 0.2x = 150 ⇒ 0.8x = 150 ⇒ x = 150 ÷ 0.8 = $187.50**

**11. 5% commission on $2000**

**⇒ 0.05 × 2000 = $100**

**12. 60% of a number is 180**

**⇒ 0.6x = 180 ⇒ x = 180 ÷ 0.6 = 300**

**13. Simple interest: $1200, 5% per annum, 3 years**

**⇒ SI = (P × R × T) / 100 = (1200 × 5 × 3) / 100 = $180**

**14. Compound interest: $2000, 10% p.a., 3 years**

**⇒ A = P(1 + r)^t = 2000(1.10)^3 = 2000 × 1.331 = $2662**

**⇒ CI = 2662 - 2000 = $662**

**15. Loan: $2000, 6% p.a., 2 years, simple interest**

**⇒ SI = (2000 × 6 × 2)/100 = $240**

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