# Individual Assignment (30 Marks)

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

To simplify 12:16, divide both numbers by their greatest common divisor, which is 4.  
12 ÷ 4 = 3, 16 ÷ 4 = 4  
So, the simplest form is 3:4.

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

First, find the total parts: 2 + 3 = 5 parts.  
Now divide the money:  
2/5 × 120 = $48, 3/5 × 120 = $72  
So, the two shares are $48 and $72.

1. 3. The ratio of cats to dogs is 4:7. If there are 28 dogs, how many cats are there?

If 7 parts = 28 dogs, then 1 part = 28 ÷ 7 = 4  
Cats = 4 × 4 = 16  
So, there are 16 cats.

1. 4. If a person earns $240 for 8 hours, what is the rate per hour?

Rate per hour = Total pay ÷ Hours = $240 ÷ 8 = $30 per hour.

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

Simplify both:  
6:9 = 2:3, 8:12 = 2:3  
Since both simplify to the same ratio, they are proportional.

1. 6. If 3 shirts cost $45, how much would 5 shirts cost?

One shirt costs $45 ÷ 3 = $15  
So, 5 shirts = 5 × $15 = $75

1. 7. If 5 pens cost $10, how much do 12 pens cost?

One pen = $10 ÷ 5 = $2  
12 pens = 12 × $2 = $24

1. 8. A class has 18 boys and 12 girls. What is the ratio of boys to total students?

Total students = 18 + 12 = 30  
Ratio of boys to total = 18:30 = 3:5 after simplifying.

1. 9. Find 25% of 480:

25% = 25/100 = 0.25  
0.25 × 480 = 120

1. 10. A jacket is sold for $150 after a 20% discount. What was the original price?

Let the original price be x.  
Discounted price = 80% of x = 0.8x  
0.8x = 150 → x = 150 ÷ 0.8 = $187.50

1. 11. A salesperson earns 5% commission on $2,000 sales. How much is the commission?

Commission = 5% of 2000 = (5/100) × 2000 = $100

1. 12. If 60% of a number is 180, what is the original number?

60% of x = 180 → (60/100) × x = 180 → 0.6x = 180 → x = 180 ÷ 0.6 = 300

1. 13. Find the simple interest on $1,200 at 5% per annum for 3 years:

Simple Interest = (P × R × T) / 100 = (1200 × 5 × 3) / 100 = $180

1. 14. $2,000 is invested at 10% per annum for 3 years compounded annually. Find total amount:

Use formula A = P(1 + r/100)^t  
A = 2000(1 + 0.10)^3 = 2000 × 1.1^3 = 2000 × 1.331 = $2,662

1. 15. Loan of $2,000 for 2 years at 6% per annum. What is total amount to be repaid?

Simple Interest = (2000 × 6 × 2)/100 = $240  
Total repayment = Principal + Interest = 2000 + 240 = $2,240