

## Individual Assignment (30 Marks)

Name: .....Hani Ali Hassan..... Faculty: .....Social Work..... ID: 473.....

Submission Date: 05-05-2025

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.

$$12 \div 4 = 3, 16 \div 4 = 4$$

So, the simplest form is 3:4.

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

First, find the total parts:  $2 + 3 = 5$  parts.

Now divide the money:

$$2/5 \times 120 = \$48, 3/5 \times 120 = \$72$$

So, the two shares are \$48 and \$72.

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 =  $28 \div 7 = 4$

$$\text{Cats} = 4 \times 4 = 16$$

So, there are 16 cats.

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

$$\text{Rate per hour} = \text{Total pay} \div \text{Hours} = \$240 \div 8 = \$30 \text{ per hour.}$$

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.

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

$$\text{One shirt costs } \$45 \div 3 = \$15$$

$$\text{So, 5 shirts} = 5 \times \$15 = \$75$$

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

$$\text{One pen} = \$10 \div 5 = \$2$$

$$12 \text{ pens} = 12 \times \$2 = \$24$$

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

$$\text{Total students} = 18 + 12 = 30$$

$$\text{Ratio of boys to total} = 18:30 = 3:5 \text{ after simplifying.}$$

9. Find 25% of 480:

$$25\% = 25/100 = 0.25$$

$$0.25 \times 480 = 120$$

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  $x = 0.8x$

$$0.8x = 150 \Rightarrow x = 150 \div 0.8 = \$187.50$$

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

$$\text{Commission} = 5\% \text{ of } 2000 = (5/100) \times 2000 = \$100$$

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

$$60\% \text{ of } x = 180 \Rightarrow (60/100) \times x = 180 \Rightarrow 0.6x = 180 \Rightarrow x = 180 \div 0.6 = 300$$

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

$$\text{Simple Interest} = (P \times R \times T) / 100 = (1200 \times 5 \times 3) / 100 = \$180$$

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

Use formula  $A = P(1 + r/100)^t$

$$A = 2000(1 + 0.10)^3 = 2000 \times 1.1^3 = 2000 \times 1.331 = \$2,662$$

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

$$\text{Simple Interest} = (2000 \times 6 \times 2) / 100 = \$240$$

$$\text{Total repayment} = \text{Principal} + \text{Interest} = 2000 + 240 = \$2,240$$