



ALPHA UNIVERSITY BORAMA

Assignment of math's methods

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The assignment

Individual assailment the assignment 30 marks

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Express the ratio 12:16 in its simplest form.

Divide \$120 in the ratio 2:3.

The ratio of cats to dogs in a pet shop is 4:7. If there are 28 dogs, how many cats are there?

If a person earns \$240 for working 8 hours, what is the rate of pay per hour?

Are the ratios 6:9 and 8:12 proportional?

If 3 shirts cost \$45, how much would 5 shirts cost at the same rate?

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

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

Find 25% of 480.

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

A salesperson earns a 5% commission on sales. If they sell goods worth \$2,000, how much commission do they earn?

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

Find the simple interest on \$1,200 at a rate of 5% per annum for 3 years.

A sum of \$2,000 is invested at 10% per annum for 3 years compounded annually. Find the total amount.

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

$$\text{Total parts} = 2 + 3 = 5$$

$$\text{Each part} = \$120 \div 5 = \$24$$

$$\text{So, 2 parts} = \$48, \text{ 3 parts} = \$72$$

Answer: \$48 and \$72

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

$$7 \text{ parts} = 28 \text{ ? } 1 \text{ part} = 4$$

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

Answer: 16 cats

4. Earns \$240 for 8 hours ? pay per hour

$$\$240 \div 8 = \$30$$

Answer: \$30/hour

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

$$6 \div 9 = 2/3; 8 \div 12 = 2/3$$

Yes, they are proportional.

6. 3 shirts = \$45 ? 5 shirts = ?

$$\$45 \div 3 = \$15 \text{ per shirt}$$

$$5 \times \$15 = \$75$$

Answer: \$75

7. 5 pens = \$10 ? 12 pens = ?

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

$$12 \times \$2 = \$24$$

Answer: \$24

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

$$\text{Ratio} = 18:30 = 3:5$$

Answer: 3:5

9. Find 25% of 480

$$0.25 \times 480 = 120$$

Answer: 120

10. \$150 after 20% discount Original price?

$$\text{Let original} = x \quad x - 0.2x = 150 \quad 0.8x = 150 \quad x = 150 \div 0.8 = \$187.50$$

Answer: \$187.50

11. 5% of \$2,000 = $0.05 \times 2000 = \$100$

Answer: \$100

12. 60% of number = 180 $0.6x = 180 \quad x = 180 \div 0.6 = 300$

Answer: 300

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

$$SI = P \times R \times T / 100 = 1200 \times 5 \times 3 \div 100 = \$180$$

Answer: \$180

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

$$A = P(1 + r)^t = 2000 \times (1 + 0.10)^3 = 2000 \times 1.331 = \$2662$$

Answer: \$2662

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

$$A = 2000 \times (1 + 0.06)^2 = 2000 \times 1.1236 = \$2247.20$$

Answer: \$2247.20