



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

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?

ANSWER

Simplify 12:16

= Simplest form: 3:4

Divide \$120 in the ratio 2:3

Total parts = $2 + 3 = 5$

Each part = $120 \div 5 = \$24$

So, 2 parts = $2 \times 24 = \$48$

3 parts = $3 \times 24 = \$72$

Cats to dogs = 4:7, Dogs = 28

1 part = $28 \div 7 = 4$

Cats = $4 \times 4 = 16$

\$240 for 8 hours

Rate = $240 \div 8 = \$30/\text{hour}$

Are 6:9 and 8:12 proportional?

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

Yes, they are proportional.

$$3 \text{ shirts} = \$45, 1 \text{ shirt} = 45 \div 3 = \$15$$

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

$$5 \text{ pens} = \$10, 1 \text{ pen} = 10 \div 5 = \$2$$

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

$$18 \text{ boys}, 12 \text{ girls ? Total} = 30 \text{ students}$$

$$\text{Boys to total} = 18:30 = 3:5$$

$$25\% \text{ of } 480 = 0.25 \times 480 = 120$$

$$\$150 \text{ after } 20\% \text{ discount}$$

$$\text{Let original} = x$$

$$80\% \text{ of } x = 150 ? 0.8x = 150$$

$$X = 150 \div 0.8 = \$187.50$$

$$5\% \text{ of } \$2,000 = 0.05 \times 2000 = \$100$$

$$60\% \text{ of a number} = 180$$

$$\text{Let number} = x$$

$$0.6x = 180 ? x = 180 \div 0.6 = 300$$

$$\text{Simple Interest} = P \times R \times T \div 100$$

$$= 1200 \times 5 \times 3 \div 100 = \$180$$

$$\text{Compound interest: } A = P(1 + r/100)^t$$

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

$$= 2000 \times 1.331 = \$2662$$

$$\text{Simple Interest} = 2000 \times 6 \times 2 \div 100 = 240$$

$$\text{Total repayment} = 2000 + 240 = \$2240$$

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