



ALPHA UNIVERSITY BORAMA.

Assignment of math's methods



faculty: BMS

Department: Social work. ID ...785

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Individual assignment..... 30 marks

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

Divide both terms by the GCD (4):

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

Answer: 3:4

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

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

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

$$2 \text{ parts} = 2 \times \$24 = \$48$$

$$3 \text{ parts} = 3 \times \$24 = \$72$$

Answer: \$48 and \$72

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

$$\text{Each part} = 28 \div 7 = 4$$

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

Answer: 16 cats

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

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

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

$$6:9 = 2:3$$

$$8:12 = 2:3$$

Yes, they are proportional.

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

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

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

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

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

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

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8. 18 boys and 12 girls — what's the ratio of boys to total students?

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

$$\text{Ratio} = 18:30 = \text{divide by } 6 = 3:5$$

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9. Find 25% of 480:

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

$$0.25 \times 480 = 120$$

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

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

$$\text{After 20\% discount: } x - 0.20x = 0.80x = 150$$

$$x = 150 \div 0.80 = \$187.50$$

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11. 5% commission on \$2,000 sales:

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

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12. 60% of a number is 180. Find the number:

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

$$0.60x = 180$$

$$x = 180 \div 0.60 = 300$$

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

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

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14. Compound Interest on \$2,000 at 10% for 3 years:

$$\text{Amount} = P(1 + r/100)^t = 2000(1 + 0.10)^3$$

$$= 2000 \times 1.1^3 = 2000 \times 1.331 = \$2,662$$

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15. Loan of \$2,000 at 6% for 2 years — Total repayment:

$$SI = (2000 \times 6 \times 2)/100 = \$240$$

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