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Assessment maths

1. Simplest form of 12:16

? Divide both by 4:

$$12:16 = 3:4$$

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

? Total parts = $2 + 3 = 5$

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

? Shares = $2 \times \$24$ and $3 \times \$24 = \48 and $\$72$

3. Cats to dogs is 4:7, with 28 dogs

? 7 parts = 28 ? 1 part = 4

? Cats = $4 \times 4 = 16$ cats

4. \$240 for 8 hours

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

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

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

? Yes, they are proportional.

6. 3 shirts cost \$45, cost of 5 shirts?

? 1 shirt = $\$45 \div 3 = \15

? 5 shirts = $\$15 \times 5 = \75

7. 5 pens cost \$10, cost of 12 pens?

? 1 pen = $\$10 \div 5 = \2

? 12 pens = $12 \times \$2 = \24

8. Ratio of boys (18) to total students ($18+12 = 30$)

? Ratio = $18:30 = 3:5$

9. 25% of 480

? = $0.25 \times 480 = 120$

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

? Let original price = x

? x ? $20\%x = 150$? $0.8x = 150$? $x = 150 \div 0.8 = \$187.50$

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

? $0.05 \times 2000 = \$100$

12. 60% of a number is 180

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

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

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

? $A = P(1 + r)^t = 2000 \times (1.1)^3$? $2000 \times 1.331 = \$2,662$

15. Loan of \$2,000 for 2 years at 6% (Simple Interest)

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

? Total = $2000 + 240 = \$2,240$