

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

$$12 \div 4 = 3, \quad 16 \div 4 = 4 \quad \text{Ans: } 3:4$$

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

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

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

$$2 \times \$24 = \$48, \quad 3 \times \$24 = \$72$$

Ans: \$48 and \$72

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

$$4 \div 7 \times x = 28 \quad 7x = 112 \quad \text{divide each side } 7 \quad x = 16$$

Ans: 16 cats

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

$$240/8=30$$

Ans: \$30 per hour

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

$$6:9 = 2:3, \quad 8:12 = 2:3 \quad \text{Ans: Yes, they are proportional}$$

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

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

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

Ans: \$75

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

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

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

Ans: \$24

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

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

$$\text{Ratio of boys to total} = 18:30$$

Simplify: Divide both by 6 ? 3:5 ? Answer: 3:5

**9. Find 25% of 480.**

$$25/100 \times 480 = 120$$

Answer: 120

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

Let original price = x

20% discount means 80% of the price = \$150

$$0.8x = 150 \text{ divide each side } 0.8 \text{ to get } x \text{ so answer is } = 187.5$$

Answer: \$187.50

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

$$5/100 \times 2000 = 100$$

Answer: \$100

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

Let the number be xx:

$$0.6x = 180 \text{ divide each side } 0.6 \text{ ? } 300$$

Answer: 300

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

$$SI = P \times R \times T$$

$$1200 \times 0.05 \times 3 = 180$$

Answer: \$180

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

So first year it becomes  $2,000 \times 0.1 = 200$  amount of end year 2,200

then second year it becomes  $2,200 \times 0.1 = 220$  amount of end year 2,420

third third it becomes  $2,420 \times 0.1 = 242$  amount of end year 2,662

Ans: \$2,662

**15. 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?**

$$SI=2000 \times 0.06 \times 2 = 240$$

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

Answer: \$2240