

## EXERCISE

# 4

# Ratio and Proportion

1. A sum of money is to be distributed among A, B, C, D in the proportion of 5: 2: 4: 3. If C get Rs. 1000 more than D, what is B's share?

- (a) Rs. 500                      (b) Rs. 1500  
(c) Rs 2000                    (d) Rs. 2400

**Answer: c)**

$$A : B : C : D \Rightarrow 5 : 2 : 4 : 3$$

$\Rightarrow$  C gets 1 unit more than D.

Given, C gets Rs. 1000 more than D.

$\Rightarrow$  1 unit = Rs, 1000  $\Rightarrow$  B's share = 2 units

$$= 2 \times 1000 = \text{Rs. } 2000$$

2. If  $0.77 : x :: 5 : 8$ , then x is equal to:

- (a) 1.12                      (b) 1.2  
(c) 1.25                      (d) 1.30

**Answer: b)**

$$0.75 : x :: 5 : 8$$

$$\frac{0.75}{x} = \frac{5}{8} \Rightarrow 5x = 6.00 \Rightarrow x = 1.2$$

3. If P: Q = 8:15 and Q: R = 3:2, then find P: Q: R?

- (a) 8:15:7                      (b) 7:15:8  
(c) 8:15:10                    (d) 10:15:8

**Answer: c)**

$$P : Q = 8 : 15$$

$$P : Q : R = ?$$

$$Q : R = (3 : 2) \times 5 \Rightarrow Q : R = 15 : 10 \quad P : Q = 8 : 15 \Rightarrow 15 : 10 = Q : R$$

$$P : Q : R = 8 : 15 : 10$$

4. Find the 4<sup>th</sup> proportional to 4, 16 and 7?

- (a) 28                      (b) 29  
(c) 22                      (d) 25

**Answer: a)**

Let the fourth proportional to 4, 16, 7 be x.

$$4 : 16 :: 7 : x$$

$$\frac{4}{16} = \frac{7}{x} \Rightarrow 4x = 16 \times 7 \Rightarrow x = 4 \times 7 = 28$$

5. Find the mean proportional between 9 and 64?

- (a) 25                      (b) 24  
(c) 27                      (d) 35

**Answer: b)**

Let the mean proportion be = R.

$$9 : r :: r : 64 \Rightarrow \frac{9}{r} = \frac{r}{64}$$

$$r^2 = 9 \times 64 = r = 3 \times 8 = 24$$

6. What will be the duplicate ratio of 2:7?

- (a) 4 : 49                      (b) 49 : 4  
(c) 4 : 14                      (d) 8 : 343

**Answer: a)**

Duplicate ratio = ratio of squares

$$\text{Duplicate ratio of } 2 : 7 = 2^2 : 7^2 = 4 : 49$$

7. Find the sub-duplicate ratio of 81 : 64?

- (a) 8:9                      (b) 4:9  
(c) 9:8                      (d) 7:8

