

Jenden Heart High School, Sec.-33 B chd.

Class: VII

Teacher: Deepu

Subject: Mathematics

Topic: Chapter-7: Ratio and proportion

Ratio: is the comparison of two quantity of same kind by division

e.g: $a : b$

1st term

→ 2nd term

(Antecedent)

(Consequent)

- Ratio has no units
- If we multiply both antecedent and consequent by same number, then the ratio remain same.
- Ratio in simplest form (lowest form)
 $a : b$, said to be in lowest form, if H.C.F of a and b is 1.
- Comparison of Ratios: Two compare two ratios, we make the denominator same and then check for the numerator,

Exercise - 7A

Soln 1 (iii) $2.1 : 1.2 = \frac{21}{10} : \frac{12}{10} = 7:4$

vi) $8ab^2 : 6a^2b = \frac{4 \cancel{8}ab^2}{3 \cancel{6}a^2b} = \frac{4b}{3a} = 4b:3a$

Soln 2 (iii) $\frac{2}{3} : \frac{5}{6} = \frac{4}{6} : \frac{5}{6} = 4:5$

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Soln 3

$$8 \text{ months} : 1\frac{2}{3} \text{ years} = 8 : \frac{5}{3} \times 12$$
$$= \frac{8}{1} : \frac{20}{1} = 2:5$$

Soln 7

Money to be distributed = ₹ 16250
ratio = 5:7:13

$$\text{Share of A} = 5x$$

$$\text{Share of B} = 7x$$

$$\text{Share of C} = 13x$$

$$\Rightarrow 5x + 7x + 13x = 16250$$

$$25x = 16250$$

$$x = \frac{16250}{25} = 650$$

$$\text{Share of A} = 5x = 5 \times 650 = ₹ 3250$$

$$\text{Share of B} = 7x = 7 \times 650 = ₹ 4550$$

$$\text{Share of C} = 13x = 13 \times 650 = ₹ 8450$$

Soln 8

$$a:b = 5:6$$

$$b:c = 2:3$$

$$a:c = ?$$

$$\frac{a}{b} = \frac{5}{6}$$

$$\frac{b}{c} = \frac{2}{3}$$

$$\frac{a}{b} = \frac{20}{24}$$

$$\frac{b}{c} = \frac{24}{30}$$

$$\Rightarrow a:b:c = 20:24:30$$

$$\Rightarrow a:c = 20:30$$
$$= 2:3$$

class : VII

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Topic : Chapter - Ratio and Proportion

Teacher : Deepa

Proportion : A statement of equality of two ratios is called a proportion.

$$\begin{array}{c} \text{means} \\ a : b = c : d \\ \text{extremes} \end{array}$$

In proportion, the product of extremes = Product of means
 $\Rightarrow a \times d = b \times c$

Exercise - 7B

Soln-2 (iii) 0.8, 3, 2.4, 9

$$\text{Product of 'extremes'} = 0.8 \times 9 = 7.2$$

$$\text{Product of means} = 3 \times 2.4 = 7.2$$

$$\Rightarrow 0.8 : 3 :: 2.4 : 9$$

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75

Soln 3 (iii) $6 : 0.8 :: x : 10$

Product of extremes = Product of means

$$6 \times 10 = 0.8 \times x$$

$$\frac{6 \times 10}{0.8} = x$$

$$75 = x$$

$$\boxed{75 = x}$$

Soln 4 det The fourth proportional to :

$$\frac{1}{3}, \frac{2}{5}, 6, x$$

$$\frac{1}{3} \times x = \frac{2}{5} \times 6$$

$$x = \frac{2}{5} \times 6 \times 3$$

$$\boxed{x = \frac{36}{5}}$$

————— x ————— x —————