

# CLASS NOTES

CLASS -VI

TOPIC – Ratio & Proportion

SUBJECT- MATHS

Day – Tuesday

Date – 19/01/21

Absolutely prepared at home.

Ex-11.2

**1. Determine if the following are in proportion.**

(a) 15, 45, 40, 120

(b) 33, 121, 9, 96

(c) 24, 28, 36, 48

**Solutions:**

(a) 15, 45, 40, 120

$$15 / 45 = 1 / 3$$

$$40 / 120 = 1 / 3$$

Hence, 15: 45 = 40:120

∴ These are in a proportion

(b) 33, 121, 9, 96

$$33 / 121 = 3 / 11$$

$$9 / 96 = 3 / 32$$

Hence 33:121 ≠ 9: 96

∴ These are not in a proportion

(c) 24, 28, 36, 48

$$24 / 28 = 6 / 7$$

$$36 / 48 = 3 / 4$$

Hence, 24: 28 ≠ 36:48

∴ These are not in a proportion

**2. Write True (T) or False ( F ) against each of the following statements :**

a) 16 : 24 :: 20 : 30

(b) 21: 6 :: 35 : 10

(c) 12 : 18 :: 28 : 12

**Solutions:**

(a) 16: 24 :: 20: 30

$$16 / 24 = 2 / 3$$

$$20 / 30 = 2 / 3$$

Hence, 16: 24 = 20: 30

Therefore True

(b) 21: 6:: 35: 10

$$21 / 6 = 7 / 2$$

$$35 / 10 = 7 / 2$$

Hence, 21: 6 = 35: 10

Therefore True

(c) 12: 18 :: 28: 12

$$12 / 18 = 2 / 3$$

$$28 / 12 = 7 / 3$$

Hence, 12: 18 ≠ 28:12

Therefore False

**3. Are the following statements true?**

(a) 40 persons : 200 persons = ₹ 15 : ₹ 75

(b) 7.5 litres : 15 litres = 5 kg : 10 kg

(c) 99 kg : 45 kg = ₹ 44 : ₹ 20

**Solutions:**

(a) 40 persons : 200 persons = ₹ 15 : ₹ 75

$$40 / 200 = 1 / 5$$

$$15 / 75 = 1 / 5$$

Hence, True

(b)  $7.5 \text{ litres} : 15 \text{ litres} = 5 \text{ kg} : 10 \text{ kg}$

$$7.5 / 15 = 1 / 2$$

$$5 / 10 = 1 / 2$$

Hence, True

(c)  $99 \text{ kg} : 45 \text{ kg} = ₹ 44 : ₹ 20$

$$99 / 45 = 11 / 5$$

$$44 / 20 = 11 / 5$$

Hence, True

**4. Determine if the following ratios form a proportion. Also, write the middle terms and extreme terms where the ratios form a proportion.**

**(c)  $2 \text{ kg} : 80 \text{ kg}$  and  $25 \text{ g} : 625 \text{ g}$**

$$2 / 80 = 1 / 40$$

$$25 / 625 = 1 / 25$$

No, these are not in a proportion

**(d)  $200 \text{ mL} : 2.5 \text{ litre}$  and  $₹ 4 : ₹ 50$**

$$1 \text{ litre} = 1000 \text{ ml}$$

$$2.5 \text{ litre} = 2.5 \times 1000 = 2500 \text{ ml}$$

$$200 / 2500 = 2 / 25$$

$$4 / 50 = 2 / 25$$

Yes, these are in a proportion

Middle terms are 2.5 litres, ₹ 4 and Extreme terms are 200 ml, ₹ 50

### Ex – 12.3

**3. If it has rained 276 mm in the last 3 days, how many cm of rain will fall in one full week (7 days)? Assume that the rain continues to fall at the same rate.**

**Solutions:**

$$\text{Measure of rain in 3 days} = 276 \text{ mm}$$

$$\text{Measure of rain in one day} = 276 / 3 = 92 \text{ mm}$$

$$\text{So, measure of rain in one week i.e 7 days} = 92 \times 7 = 644 \text{ mm}$$

$$= 644 / 10 = 64.4 \text{ cm}$$

**4. Cost of 5 kg of wheat is ₹ 91.50.**

**(a) What will be the cost of 8 kg of wheat?**

**(b) What quantity of wheat can be purchased in ₹ 183?**

**Solutions:**

(a) Cost of 5 kg wheat = ₹ 91.50.

$$\text{Cost of 1 kg wheat} = 91.50 / 5 = ₹ 18.3$$

$$\text{So, cost of 8 kg wheat} = 18.3 \times 8 = ₹ 146.40$$

(b) Wheat purchased in ₹ 91.50 = 5 kg

$$\text{Wheat purchased in ₹ 1} = 5 / 91.50 \text{ kg}$$

$$\text{So, wheat purchased in ₹ 183} = (5 / 91.50) \times 183 = 10 \text{ kg}$$

**6. Shaina pays ₹ 15000 as rent for 3 months. How much does she have to pay for a whole year, if the rent per month remains same?**

**Solutions:**

$$\text{Rent paid by Shaina in 3 months} = ₹ 15000$$

$$\text{Rent for 1 month} = 15000 / 3 = ₹ 5000$$

$$\text{So, rent for 12 months i.e 1 year} = 5000 \times 12 = ₹ 60,000$$

$$\therefore \text{Rent paid by Shaina in 1 year is ₹ 60,000}$$

**7. Cost of 4 dozen bananas is ₹ 180. How many bananas can be purchased for ₹ 90?**

**Solutions:**

$$\text{Number of bananas bought in ₹ 180} = 4 \text{ dozens} = 4 \times 12 = 48 \text{ bananas}$$

$$\text{Number of bananas bought in ₹ 1} = 48 / 180$$

$$\text{So, number of bananas bought in ₹ 90} = (48 / 180) \times 90 = 24 \text{ bananas}$$

∴ 24 bananas can be purchased in ₹ 90.

**9. A truck requires 108 litres of diesel for covering a distance of 594 km. How much diesel will be required by the truck to cover a distance of 1650 km?**

**Solutions:**

Diesel required for 594 km = 108 litres

Diesel required for 1 km =  $108 / 594 = 2 / 11$  litre

So, diesel required for 1650 km =  $(2 / 11) \times 1650 = 300$  litres

∴ Diesel required by the truck to cover a distance of 1650 km is 300 litres

**10. Raju purchases 10 pens for ₹ 150 and Manish buys 7 pens for ₹ 84. Can you say who got the pens cheaper?**

**Solutions:**

Pens purchased by Raju in ₹ 150 = 10 pens

Cost of 1 pen =  $150 / 10 = ₹ 15$

Pens purchased by Manish in ₹ 84 = 7 pens

Cost of 1 pen =  $84 / 7 = ₹ 12$

∴ Pens purchased by Manish are cheaper than Raju

**Home Assignments**

**Ex-12.2**

**Q1- d) e) f)**

**Q2-d) e) f)**

**Q3- d) e)**

**Q-4- a) b)**

**Ex-12.3**

**Q1, 2 , 5, 8 & 11**



