

1. Determine if the ^{Ex 12.2} following are in proportion. Q

a. 15, 45, 40, 120

$$15 : 45 = \frac{15}{45} = \frac{1}{3} = 1 : 3$$

$$40 : 120 = \frac{40}{120} = \frac{1}{3} = 1 : 3$$

$$1 : 3 = 1 : 3$$

Ans: 15, 45, 40, 120 are in proportion.

c. 24, 28, 36, 48

$$24 : 28 = \frac{24}{28} = \frac{6}{7} = 6 : 7$$

$$36 : 48 = \frac{36}{48} = \frac{6}{8} = 6 : 8$$

$$6 : 7 \neq 6 : 8$$

Ans: 24, 28, 36, 48 do not form a proportion.

f. 33, 44, 75, 100

$$33 : 44 = \frac{33}{44} = \frac{3}{4} = 3 : 4$$

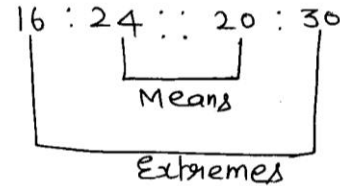
$$75 : 100 = \frac{75}{100} = \frac{3}{4} = 3 : 4$$

$$3 : 4 = 3 : 4$$

Ans: 33, 44, 75, 100 are in proportion.

2. Write True (T) or False (F) against each of the following statements: (10)

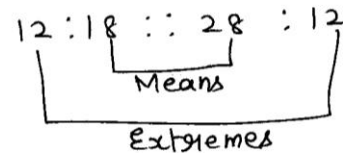
a. $16 : 24 :: 20 : 30$



$$\begin{aligned} \text{Product of means} &= \text{Product of extremes} \\ 24 \times 20 &= 16 \times 30 \\ 480 &= 480 \end{aligned}$$

Ans: True

c. $12 : 18 :: 28 : 12$



$$18 \times 28 = 504$$

$$12 \times 12 = 144$$

$$504 \neq 144$$

Ans: False

e. $5:2:3.9 :: 3:4$ (11)

$5:2:3.9 :: 3:4$

$3.9 \times 3 = 11.7$

$5.2 \times 4 = 20.8$

$11.7 \neq 20.8$

Ans: False

f. $0.9:0.36 :: 10:4$

$0.9:0.36 :: 10:4$

$0.36 \times 10 = 3.60 = 3.6$

$0.9 \times 4 = 3.6 = 3.6$

$3.6 = 3.6$

Ans: True

3. Are the following statements true?

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

$\frac{7.5}{15} = 0.5$

$\frac{5}{10} = \frac{1}{2} = 0.5$

$0.5 = 0.5$

Ans: True

c. $99 \text{ kg} : 45 \text{ kg} = ₹44 : ₹20$ (12)

$\frac{99}{45} = \frac{11}{5} = 11:5$

$\frac{44}{20} = \frac{11}{5} = 11:5$

$11:5 = 11:5$

Ans: True

e. $45 \text{ km} : 60 \text{ km} = 12 \text{ hours} : 15 \text{ hours}$

$\frac{45}{60} = \frac{9}{12} = \frac{3}{4} = 3:4$

$\frac{12}{15} = \frac{4}{5} = 4:5$

$3:4 \neq 4:5$

Ans: False

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

b. $39 \text{ litres} : 65 \text{ litres}$ and $6 \text{ bottles} : 10 \text{ bottles}$

$\frac{39}{65} = \frac{3}{5} = 3:5$, $\frac{6}{10} = \frac{3}{5} = 3:5$

$3:5 = 3:5$

Ans: Yes

$39 : 65 :: 6 : 10$

Middle terms = 65l, 6 bottles

Extreme terms = 39l, 10 bottles

c. $2 \text{ kg} : 80 \text{ kg}$ and $25 \text{ g} : 625 \text{ g}$

$$\frac{2}{80} = \frac{1}{40} = 1:40$$

$$\frac{25}{625} = \frac{1}{25} = 1:25$$

$$1:40 \neq 1:25$$

Ans, No.

d. $200 \text{ ml} : 2.5 \text{ l}$ and $\text{₹} 4 : \text{₹} 50$

$$200 \text{ ml} : 2.5 \text{ l}$$

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

$$2.5 \text{ l} = 2.5 \times 1000$$

$$= 2500.0$$

$$= 2500 \text{ ml}$$

$$200 \text{ ml} : 2500 \text{ ml}$$

$$\frac{200}{2500} = \frac{2}{25}$$

$$= 2:25$$

$$2:25 = 2:25$$

yes

Ans: $200 \text{ ml} : 2.5 \text{ l} \therefore \text{₹} 4 : \text{₹} 50$

Middle terms $\rightarrow 2.5 \text{ l}, \text{₹} 4$

Extreme terms $\rightarrow 200 \text{ ml}, \text{₹} 50$

EX - 12.3

2. Ekta earns `3000 in 10 days - how much will she earn in 30 days.

Soln:

Amount Ekta earns	
10 days	= `3000
30 days	= `?
Days	Rupees
10	3000
30	?

$$\text{Amount will earn in 30 days} = \frac{3000}{10} \times 30$$

$$= `9000$$

Ans: Ekta will earn `9000 in 30 days.

4. Cost of 5 kg of wheat is `91.50

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

Soln: Cost of wheat

5kg	=	`91.50
8kg	=	?
	=	$\frac{91.50}{5} \times 8$
	=	18.30×8
	=	`146.40

Ans: Cost of 8kg of wheat is `146.40

b) What quantity of wheat can be purchased in `183?

Soln: Quantity of wheat purchased

`91.50	=	5kg
`183	=	? kg
	=	5kg = $\frac{5}{91.50_{18.30}} \times 183$
	=	10kg

Ans: 10kg of wheat can be purchased in `183.