



Exercise 10B

Q1

**Answer :**

(i) 4, 6, 8, 12

$$\frac{4}{6} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}; \quad \frac{8}{12} = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$

Hence, 4:9::8:12 are in proportion.

(ii) 7, 42, 13, 78

$$\frac{7}{42} = \frac{7 \div 7}{42 \div 7} = \frac{1}{6}; \quad \frac{13}{78} = \frac{13 \div 13}{78 \div 13} = \frac{1}{6}$$

Hence, 7:42::13:78 are in proportion.

(iii) 33, 121, 9, 96

$$\frac{33}{121} = \frac{33 \div 11}{121 \div 11} = \frac{3}{11}; \quad \frac{9}{96} = \frac{9 \div 3}{96 \div 3} = \frac{3}{32}$$

Hence, 33:121::9:96 are not in proportion.

(iv) 22, 33, 42, 63

$$\frac{22}{33} = \frac{22 \div 11}{33 \div 11} = \frac{2}{3} \quad \text{and} \quad \frac{42}{63} = \frac{42 \div 21}{63 \div 21} = \frac{2}{3}$$

Hence, 22:33 :: 42 : 63 are not in proportion.

(v) 32, 48, 70, 210

$$\frac{32}{48} = \frac{32 \div 6}{48 \div 6} = \frac{7}{8}; \quad \frac{70}{210} = \frac{70 \div 70}{210 \div 70} = \frac{1}{3}$$

Hence, 32:48::70:210 are not in proportion.

(vi) 150, 200, 250, 300

$$\frac{150}{200} = \frac{150 \div 50}{200 \div 50} = \frac{3}{4}; \quad \frac{250}{300} = \frac{250 \div 50}{300 \div 50} = \frac{5}{6}$$

Hence, 150:200::250:300 are not in proportion.

Q2

**Answer :**

(i) 60:105::84:147

$$\frac{60}{105} = \frac{60 \div 15}{105 \div 15} = \frac{4}{7} \quad (\text{H.C.F. of 60 and 105 is 15.})$$

$$\frac{84}{147} = \frac{84 \div 21}{147 \div 21} = \frac{4}{7} \quad (\text{H.C.F. of 84 and 147 is 21.})$$

(ii) 91:104::119:136

$$\frac{91}{104} = \frac{91 \div 13}{104 \div 13} = \frac{7}{8} \quad (\text{H.C.F. of 91 and 104 is 13.})$$

$$\frac{119}{136} = \frac{119 \div 17}{136 \div 17} = \frac{7}{8} \quad (\text{H.C.F. of 11 and 136 is 17.})$$

Hence, 91:104::119:136 are in proportion.

(iii) 108:72::129:86

$$\frac{108}{72} = \frac{108 \div 36}{72 \div 36} = \frac{3}{2} \quad (\text{H.C.F. of 108 and 72 is 36.})$$

$$\frac{129}{86} = \frac{129 \div 43}{86 \div 43} = \frac{3}{2} \quad (\text{H.C.F. of 129 and 86 is 43.})$$

Hence, 108:72::129:86 are in proportion.

(iv) 39:65::141:235

$$\frac{39}{65} = \frac{39 \div 13}{65 \div 13} = \frac{3}{5} \quad (\text{H.C.F. of 39 and 65 is 13.})$$

$$\frac{141}{235} = \frac{141 \div 47}{235 \div 47} = \frac{3}{5} \quad (\text{H.C.F. of 141 and 235 is 47.})$$

Hence, 39:65::141:235 are in proportion.

Q3

**Answer :**

(i) 55:11::x:6

Product of extremes = Product of means

$$55 \times 6 = 11 \times x$$

$$\Rightarrow 11x = 330$$

$$\Rightarrow x = \frac{330}{11} = 30$$

(ii) 27:x::63:84

Product of extremes = Product of means

$$27 \times 84 = x \times 63$$

$$\Rightarrow 63x = 2268$$

$$\Rightarrow x = \frac{2268}{63} = 36$$

(iii) 51:85::57:x

Product of extremes = Product of means

$$51 \times x = 85 \times 57$$

$$\Rightarrow 51x = 4845$$

$$\Rightarrow x = \frac{4845}{51} = 95$$

(iv) x:92::87:116

Product of extremes = Product of means

$$x \times 116 = 92 \times 87$$

$$\Rightarrow 116x = 8004$$

$$\Rightarrow x = \frac{8004}{116} = 69$$

Q4

**Answer :**

(i) 51:68::85:102

$$\text{Product of means} = 68 \times 85 = 5780$$

$$\text{Product of extremes} = 51 \times 102 = 5202$$

$$\text{Product of means} \neq \text{Product of extremes}$$

Hence, (F).

(ii) 36:45::80:100

$$\text{Product of means} = 45 \times 80 = 3600$$

$$\text{Product of extremes} = 36 \times 100 = 3600$$

$$\text{Product of means} = \text{Product of extremes}$$

Hence, (T).

(iii) 30 bags:18 bags::Rs 450:Rs 270

$$\text{or } 30:18::450:270$$

$$\text{Product of means} = 18 \times 450 = 8100$$

$$\text{Product of extremes} = 30 \times 270 = 8100$$

$$\text{Product of means} = \text{Product of extremes}$$

Hence, (T).

(iv) 81 kg:45 kg::18 men:10 men

$$\text{or } 81:45::18:10$$

$$\text{Product of means} = 45 \times 18 = 810$$

$$\text{Product of extremes} = 81 \times 10 = 810$$

$$\text{Product of means} = \text{Product of extremes}$$

Hence, (T).

(v) 45 km:60 km::12 h:15 h

$$\text{or, } 45:60::12:15$$

$$\text{Product of means} = 60 \times 12 = 720$$

$$\text{Product of extremes} = 45 \times 15 = 675$$

$$\text{Product of means} \neq \text{Product of extremes}$$

Hence, (F).

(vi) 32 kg:Rs 36::8 kg:Rs 9

$$\text{Product of means} = 36 \times 8 = 288$$

$$\text{Product of extremes} = 32 \times 9 = 288$$

$$\text{Product of means} = \text{Product of extremes}$$

Hence, (T).

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