

Q. 2) determine if the following are in proportion.

① a) $6:10$ and $21:35$.

$$= \frac{6}{10} = \frac{21}{35}$$

product of extremes

$$= 6 \times 35 = 210$$

product of middle term

$$10 \times 21 = 210$$

Thus $210 = 210$ are in proportion.

② b) $18:45$ and $40:100$ $= \frac{18}{45} = \frac{40}{100}$

product of extremes

$$18 \times 100 = 1800$$

product of middle term

$$45 \times 40 = 1800$$

Thus $1800 = 1800$ are in proportion.

c) $20:25$ and $12:15$.

$$\frac{20}{25} = \frac{12}{15}$$

Product of extremes

$$20 \times 15 = 300$$

Product of middle term

$$25 \times 12 = 300$$

Thus $300 = 300$ are in proportion

d) $32:48$ and $70:105$

$$\frac{32}{48} = \frac{70}{105}$$

Product of extremes

$$32 \times 105 = \cancel{4800} 3350$$

Product of middle terms

$$\cancel{48 \times 70} = \cancel{4800}$$

$$48 \times 70 = 3360$$

Thus $3350 = 3360$ are
in proportion

f) $30:40$ and $45:60$

$$\frac{30}{40} = \frac{45}{60}$$

Product of extremes

$$30 \times 60 = 1800$$

Product of middle terms

$$40 \times 45 = 1800$$

Thus $1800 = 1800$ are
in proportion

Q. ② determine in the following are in proportion.

a) 6, 2, 3, 4

$$6:2 = 3:4$$

product of extremes

$$6 \times 4 = 24$$

product of middle term

$$2 \times 3 = 6$$

Thus $24 \neq 6$ are not proportion.

b) 8, 9, 28, 34

$$8:9 = 28:34$$

$$= \frac{8}{9} \neq \frac{28}{34}$$

product of extremes

$$8 \times 34 = 272$$

product of middle

$$9 \times 28 = 252$$

Thus $272 \neq 252$ are not proportion

c) 10, 20, 30, 40 = 10:20 = 30:40

$$\frac{10}{20} \neq \frac{30}{40}$$

product of extremes

$$10 \times 40 = 400$$

product of middle term

$$20 \times 30 = 600$$

Thus $400 \neq 600$ are not proportion

d) $35, 4, 15, 98$

$$35:4 = 15:98$$

$$\frac{35}{4} \neq \frac{15}{98}$$

product of extremes

$$35 \times 98 = 3430$$

product of middle term

$$4 \times 98 = 392$$

Thus $3430 \neq 392$ are not proportional

Q. 5. Are the following statements true or false?

a) 15 cm to 2 m = 10 seconds to 3 minutes

$$= \frac{15 \text{ cm}}{2 \text{ m}} = \frac{10 \text{ seconds}}{3 \text{ minutes}}$$

product of extremes

$$15 \text{ cm} \times 3 \text{ minutes} = 45$$

middle term

$$2 \times 10 = 20$$

$$45:20 \quad \text{false}$$

b) $4.5 \text{ g} : 27 \text{ g} = 2.5 \text{ kg} : 15 \text{ kg}$

$$\frac{4.5}{27} = \frac{2.5}{15}$$

product etermeter

$$45 \times 15 = 675$$

middle team

$$27 \times 25 = 675$$

Thus 675 = 675 are

→ True

c) 16 litter : 12 litter = 4 litter : 3 litter
product etermeter

$$= \frac{16}{12} = \frac{4}{3} = 16 \times 3 = 48$$

middle team

$$12 \times 4 = 48$$

Thus 48 : 48 are

→ True

d) 45 Km : 60 Km = 12 hours : 15 Hours

$$\frac{45}{60} = \frac{12}{15}$$

product etermeter

$$45 \times 15 = 675$$

middle team

$$60 \times 12 = 720$$

Thus 675 = ~~720~~

→ False

Q ⑥ Determine whether the following ratios form a proportion. Also, write the middle terms and extreme terms where the ratios form a proportion.

a $35 \text{ cm} : 1 \text{ m}$ and $₹45 : ₹180$