Exercise 10A

Q1

Answer:

(i) $24:56 = \dfrac{24}{56} = \dfrac{24 \div 8}{56 \div 8} = \dfrac{3}{7}$

As the H.C.F. of 3 and 7 is 1, the simplest form of 24:56 is 3:7.

(ii) 84 paise to Rs 3 = Rs 0.84 to R. 3 $= \dfrac{0.84}{3} = \dfrac{0.84 \div 3}{3 \div 3} = \dfrac{0.28}{1} = \dfrac{28}{100} = \dfrac{28 \div 4}{100 \div 4} = \dfrac{7}{25}$

As the H.C.F. of 7 and 25 is 1, the simplest form of 0.84:3 is 7:25.

(iii) 4 kg:750 g = 4000 g:750 g $= \dfrac{4000 \div 250}{750 \div 250} = \dfrac{16}{3}$

As the H.C.F. of 16 and 3 is 1, the simplest form of 4000:750 is 16:3.

(iv) 1.8 kg:6 kg $= \dfrac{1.8}{6} = \dfrac{18}{60} = \dfrac{18 \div 6}{60 \div 6} = \dfrac{3}{10}$

As the H.C.F. of 3 and 10 is 1, the simplest form of 1.8:6 is 3:1.

(v) 48 minutes to 1 hour = 48 minutes to 60 minutes = $48:60 = \dfrac{48 \div 12}{60 \div 12} = \dfrac{4}{5}$

As the H.C.F. of 4 and 5 is 1, the simplest form of 48:60 is 4:5.

(vi) 2.4 km to 900 m = 2400m:900m $= \dfrac{2400}{900} = \dfrac{24}{9} = \dfrac{24 \div 3}{9 \div 3} = \dfrac{8}{3}$

As the H.C.F. of 8 and 3 is 1, the simplest form of 2400:900 is 8:3.

Q2

Answer:

(i) $36:90 = \dfrac{36}{90} = \dfrac{36 \div 18}{90 \div 18} = \dfrac{2}{5}$ (As the H.C.F. of 36 and 90 is 18.)

Since the H.C.F. of 2 and 5 is 1, the simplest form of 36:90 is 2:5.

(ii) $324:144 = \dfrac{324}{144} = \dfrac{324 \div 36}{144 \div 36} = \dfrac{9}{4}$ (As the H.C.F. of 324 and 144 is 36.)

Since the H.C.F. of 9 and 4 is 1, the simplest form of 324:144 is 9:4.

(iii) $85:561 = \dfrac{85}{561} = \dfrac{85 \div 17}{561 \div 17} = \dfrac{5}{33}$ (As the H.C.F. of 85 and 561 is 17.)

Since the H.C.F. of 5 and 33 is 1, the simplest form of 85:561 is 5:33.

(iv) $480:384 = \dfrac{480}{384} = \dfrac{480 \div 96}{384 \div 96} = \dfrac{5}{4}$ (As the H.C.F. of 480 and 384 is 96.)

Since the H.C.F. of 5 and 4 is 1, the simplest form of 480:384 is 5:4.

(v) 186:403 = $\dfrac{186}{403}$ = $\dfrac{186 \div 31}{403 \div 31}$ = $\dfrac{6}{13}$ (As the H.C.F. of 186 and 403 is 31.)

Since the H.C.F. of 6 and 13 is 1, the simplest form of 186:403 is 6:13.

(vi) 777:1147 = $\dfrac{777 \div 37}{1147 \div 37}$ = $\dfrac{21}{31}$ (As the H.C.F. of 777 and 1147 is 37.)

Since the H.C.F. of 21 and 31 is 1, the simplest form of 777:1147 is 21:31.

Q3
Answer :

(i) Rs 6.30:Rs 16.80

$\dfrac{6.30}{16.80}$ = $\dfrac{63}{168}$ = $\dfrac{63 \div 21}{168 \div 21}$ = $\dfrac{3}{8}$ (H.C.F. of 63 and 168 is 21.)

Ratio = 3 : 8

(ii) 3 weeks:30 days = 21days:30 days   (1 week = 7 days)

$\dfrac{21}{30}$ = $\dfrac{21 \div 3}{30 \div 3}$ = $\dfrac{7}{10}$ (H.C.F. of 21 and 30 is 3.)

Ratio = 7 : 10

(iii) 3 m 5 cm:35 cm = 305 cm:35 cm   (1 m = 100 cm)

$\dfrac{305}{35}$ = $\dfrac{305 \div 5}{35 \div 5}$ = $\dfrac{61}{7}$ (H.C.F. of 305 and 35 is 5.)

Ratio = 61:7

(iv) 48 min:2 hours 40 min = 48 min:160 min   (1 hour = 60 mins)

$\dfrac{48}{160}$ = $\dfrac{48 \div 16}{160 \div 16}$ = $\dfrac{3}{10}$ (H.C.F. of 48 and 160 is 16.)

Ratio = 3:10

(v) 1 L 35 mL:270 mL = 1035 mL:270 mL   (1 L = 1000 mL)

$\dfrac{1035}{270}$ = $\dfrac{1035 \div 45}{270 \div 45}$ = $\dfrac{23}{6}$ (H.C.F. of 1035 and 270 is 45.)

Ratio = 23:6

(vi) 4 kg:2 kg 500 g = 4000 g:2500 g   (1 kg= 1000 g)

$\dfrac{4000}{2500}$ = $\dfrac{40}{25}$ = $\dfrac{40 \div 5}{25 \div 5}$ = $\dfrac{8}{5}$ (H.C.F. of 40 and 25 is 5.)

Ratio = 8:5

Q4
Answer :

Mr Sahai's earning = Rs 16800

Mrs Sahai's earning = Rs 10500

(i) Ratio = 16800:10500 = 168:105 = $\dfrac{168 \div 21}{105 \div 21}$ = $\dfrac{8}{5}$ (H.C.F. of 168 and 105 is 21.)

Mr Sahai's income:Mrs Sahai's income = 8:5

(ii) Ratio = 10500:16800 = 105:168 = $\dfrac{105 \div 21}{168 \div 21}$ = $\dfrac{5}{8}$ (H.C.F. of 168 and 105 is 21.)

Mrs Sahai's income:Mr Sahai's income = 5:8

(iii) Total income = 16800 + 10500 = Rs 27300

Ratio = 16800:27300 = 168:273 = $\dfrac{168}{273}$ = $\dfrac{168 \div 21}{273 \div 21}$ = $\dfrac{8}{13}$ (H.C.F. of 168 and 273 is 21.)

Mrs Sahai's income:Total income = 8:13

Q5
Answer :

Rohit's income = Rs 15300

Rohit's savings = Rs 1224

(i) Income:Savings = 15300:1224 = $\dfrac{15300 \div 612}{1224 \div 612}$ = $\dfrac{25}{2}$ (H.C.F. of 15300 and 1224 is 612.)

Income:Savings = 25:2

(ii) Monthly expenditure = Rs (15300 − 1224) = Rs 14076

Income:Expenditure = 15300:14076 = $\dfrac{15300 \div 612}{14076 \div 612}$ = $\dfrac{25}{23}$ (H.C.F. of 15300 and 14076 is 612.)

Income:Expenditure = 25:23

(iii) Expenditure : Savings = 14076:1224 = $\dfrac{14076 \div 612}{1224 \div 612}$ = $\dfrac{23}{2}$ (H.C.F. of 14076 and 1224 is 612.)

Expenditure:Savings = 23:2

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