
Exercise 8A

Q1

**Answer :**

(i) HCF of 24 and 40 is 8.

$\therefore 24 : 40 = \frac{24}{40} = \frac{24 \div 8}{40 \div 8} = \frac{3}{5} = 3 : 5$

Hence, 24 : 40 in its simplest form is 3 : 5.

(ii) HCF of 13.5 and 15 is 1.5.

$\frac{13.5}{15} = \frac{135}{150}$

$\textbf{The HCF of } 135 \textbf{ and } 150 \textbf{ is } 15.$

$= \frac{135 \div 15}{150 \div 15} = \frac{9}{10}$

Hence, 13.5 : 15 in its simplest form is 9 : 10.

(iii) $\frac{20}{3} : \frac{15}{2} = 40 : 45$

The HCF of 40 and 45 is 5.

$\therefore 40 : 45 = \frac{40}{45} = \frac{40 \div 5}{45 \div 5} = \frac{8}{9} = 8 : 9$

Hence, $6\frac{2}{3} : 7\frac{1}{2}$ in its simplest form is 8 : 9

(iv) 9 : 6

The HCF of 9 and 6 is 3.

$\therefore 9 : 6 = \frac{9}{6} = \frac{9 \div 3}{6 \div 3} = 3 : 2$

Hence, $\frac{1}{6} : \frac{1}{9}$ in its simplest form is 3 : 2.

(v) LCM of the denominators is 2.

$\therefore 4 : 5 : \frac{9}{2} = 8 : 10 : 9$

The HCF of these 3 numbers is 1.

$\therefore$ 8 : 10 : 9 is the simplest form.

(vi) 2.5 : 6.5 : 8 = 25 : 65 : 80

The HCF of 25, 65 and 80 is 5.

$\therefore 25 : 65 : 80 = \frac{25}{\frac{65}{80}} = \frac{25 \div 5}{\frac{65 \div 5}{80 \div 5}} = \frac{5}{\frac{13}{16}} = 5 : 13 : 16$

Q2

**Answer :**

(i) Converting both the quantities into the same unit, we have:

75 paise : (3 × 100) paise = 75 : 300

$= \frac{75}{300} = \frac{75 \div 75}{300 \div 75} = \frac{1}{4}$ ($\because$ HCF of 75 and 300 = 75)

= 1 paise : 4 paise

(ii) Converting both the quantities into the same unit, we have:

105 cm : 63 cm = $\frac{105}{63} = \frac{105 \div 21}{63 \div 21} = \frac{5}{3}$ ($\because$ HCF of 105 and 63 = 21)

= 5 cm : 3 cm

(iii) Converting both the quantities into the same unit

65 min : 45 min = $\frac{65}{45} = \frac{65 \div 5}{45 \div 5} = \frac{13}{9}$ ($\because$ HCF of 65 and 45 = 5)

= 13 min : 9 min

(iv) Converting both the quantities into the same unit, we get:

8 months : 12 months = $\frac{8}{12} = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$ ($\because$ HCF of 8 and 12 = 4)

= 2 months : 3 months

(v) Converting both the quantities into the same unit, we get:

2250g : 3000 g = $\frac{2250}{3000} = \frac{2250 \div 750}{3000 \div 750} = \frac{3}{4}$ (∵ HCF of 2250 and 3000 = 750)

= 3 g : 4 g

(vi) Converting both the quantities into the same unit, we get:

1000 m : 750 m = $\frac{1000}{750} = \frac{1000 \div 250}{750 \div 250} = \frac{4}{3}$ (∵ HCF of 1000 and 750 = 250)

= 4 m : 3 m

Q3

**Answer :**

$\frac{A}{B} = \frac{7}{5}$ and $\frac{B}{C} = \frac{9}{14}$

Therefore, we have:

$\frac{A}{B} \times \frac{B}{C} = \frac{7}{5} \times \frac{9}{14}$

$\frac{A}{C} = \frac{9}{10}$

∴ A : C = 9 : 10

Q4

**Answer :**

$\frac{A}{B} = \frac{5}{8}$ and $\frac{B}{C} = \frac{16}{25}$

Now, we have : $\frac{A}{B} \times \frac{B}{C} = \frac{5}{8} \times \frac{16}{25} \Rightarrow \frac{A}{C} = \frac{2}{5}$

$\therefore A : C = 2 : 5$

## Q5

**Answer :**

$A : B = 3 : 5$

$B : C = 10 : 13 = \frac{10 \div 2}{13 \div 2} = 5 : \frac{13}{2}$

Now, $A : B : C = 3 : 5 : \frac{13}{2}$

$\therefore A : B : C = 6 : 10 : 13$

## Q6

**Answer :**

We have the following:

$A : B = 5 : 6$

$B : C = 4 : 7 = \frac{4}{7} = \frac{4 \times \frac{6}{4}}{7 \times \frac{6}{4}} = 6 : \frac{21}{2}$

$\therefore A : B : C = 5 : 6 : \frac{21}{2} = 10 : 12 : 21$

## Q7

**Answer :**

Sum of the ratio terms = 7 + 8 = 15

Now, we have the following:

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