Ratio and Proportion Ex 9.2 Q1

Answer :

(i) Writing the ratios as fractions, we have

$3 : 4 = \frac{3}{4}$ and $9 : 16 = \frac{9}{16}$

Now, LCM of 4 and 16 = 16.

Making the denominator of each fraction = 16, we have

$\frac{3}{4} = \frac{3 \times 4}{4 \times 4} = \frac{12}{16}$ and the other fraction = $\frac{9}{16}$

Of $\frac{12}{16}$ and $\frac{9}{16}$, clearly $\frac{12}{16} > \frac{9}{16}$.

Therefore, $\frac{3}{4} > \frac{9}{16}$.

(ii) Writing the ratios as fractions, we have

$15 : 16 = \frac{15}{16}$ and $24 : 25 = \frac{24}{25}$

Now, LCM of 16 and 25 = 400.

Making the denominator of each fraction = 400, we have

$\frac{15}{16} = \frac{15 \times 25}{16 \times 25} = \frac{375}{400}$ and the other fraction = $\frac{24 \times 16}{25 \times 16} = \frac{384}{400}$

Clearly, 384 > 375. So, $\frac{384}{400} > \frac{375}{400}$.

Therefore, $\frac{24}{25} > \frac{15}{16}$.

(iii) Writing the ratios as fractions, we have

$4 : 7 = \frac{4}{7}$ and $5 : 8 = \frac{5}{8}$

Now, LCM of 7 and 8 = 56.

Making the denominator of each fraction = 56, we have

$\frac{4 \times 8}{7 \times 8} = \frac{32}{56}$ and the other fraction = $\frac{5 \times 7}{8 \times 7} = \frac{35}{56}$

Clearly, 36 > 32. So, $\frac{35}{56} > \frac{32}{56}$.

Therefore, $\frac{5}{8} > \frac{4}{7}$.

(iv) Writing the ratios as fractions, we have

$9 : 20 = \frac{9}{20}$ and $8 : 13 = \frac{8}{13}$

Now, LCM of 20 and 13 = 260.

Making the denominator of each fraction = 260, we have

$\frac{9 \times 13}{20 \times 13} = \frac{117}{260}$ and the other fraction = $\frac{8 \times 20}{13 \times 20} = \frac{160}{260}$

Clearly, 160 > 117. So, $\frac{160}{260} > \frac{117}{260}$.

Therefore, $\frac{8}{13} > \frac{9}{20}$.

(v) Writing the ratios as fractions, we have

$1 : 2 = \frac{1}{2}$ and $13 : 27 = \frac{13}{27}$

Now, LCM of 2 and 27 = 54.

Making the denominator of each fraction = 54, we have

$\frac{1 \times 27}{2 \times 27} = \frac{27}{54}$ and the other fraction = $\frac{13 \times 2}{27 \times 2} = \frac{26}{54}$

Clearly, 27 > 26. So, $\frac{27}{54} > \frac{26}{54}$.

Therefore, $\frac{1}{2} > \frac{13}{27}$.

Ratio and Proportion Ex 9.2 Q2

Answer :

We have

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

Therefore, 3 : 4 is an equivalent ratio of 6 : 8.

$$\frac{6}{8} = \frac{6\times 2}{8\times 2} = \frac{12}{16}$$

Hence, 3 : 4 and 12 : 16 are equivalent ratios of 6 : 8.

Ratio and Proportion Ex 9.2 Q3

Answer :

$$\frac{12}{20} = \frac{()}{5} = \frac{9}{()}$$

Let $\frac{12}{20} = \frac{(x)}{5} = \frac{9}{(y)}$.

Then, $\frac{12}{20} = \frac{(x)}{5} \Rightarrow 12 \times 5 = 20x \Rightarrow x = \frac{12 \times 5}{20} = 3.$

Also, $\frac{12}{20} = \frac{9}{(y)} \Rightarrow 12y = 20 \times 9 \Rightarrow y = \frac{20 \times 9}{12} = 15.$

Therefore, $\frac{12}{20} = \frac{(3)}{5} = \frac{9}{(15)}$.

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