Exercise 9.2

(i) 3:4 (or) 9:16

writing the given ratios as fractions, we have

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

Now L.C.M of 4 and 16 is 16

Making the denominator of each fraction equal to 16, we have

$\frac{3}{4} = \frac{3\times4}{4\times4} = \frac{12}{16}$ and $\frac{9}{16} = \frac{9}{16}$.

Clearly $12 > 9$

$\therefore \frac{12}{16} > \frac{9}{16} \Rightarrow \frac{3}{4} > \frac{9}{16}$

(ii) 15:16 or 24:25

writing the given ratio as fractions, we have

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

L.C.M of 25 & 16 is = 400

Making the denominator of each fraction equal to 400, we have

$\frac{15}{16} = \frac{15\times25}{16\times25} = \frac{375}{400}$ and $\frac{24}{25} = \frac{24\times16}{25\times16} = \frac{384}{400}$

clearly $384 > 375$

$\therefore \frac{384}{400} > \frac{375}{400} \Rightarrow \frac{24}{25} > \frac{15}{16}$.

(iii) 4:7 or 5:8

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

Now, Lcm of 7 and 8 is 56.

$\frac{4}{7} = \frac{4\times8}{7\times8} = \frac{32}{56}$ and $5:8 = \frac{5\times7}{8\times7} = \frac{35}{56}$

clearly $35 > 32$

$\therefore \frac{35}{56} > \frac{32}{56} \Rightarrow \frac{5}{8} > \frac{4}{7}$.

(iv) 9:20 or 8:13

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

Now, Lcm of 20 and 13 is 260

$\frac{9}{20} = \frac{9\times13}{20\times13} = \frac{117}{260}$ and $\frac{8}{13} = \frac{8\times20}{20\times13} = \frac{160}{260}$.

Clearly $160 > 117$

$\therefore \frac{160}{260} > \frac{117}{260} \Rightarrow \frac{8}{13} > \frac{9}{20}$.

(v) 1:2 or 13:27

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

Now, Lcm of 2 and 27 is 54

$\frac{27}{54}$ (or) $\frac{26}{54}$

$\therefore \frac{1}{2} > \frac{13}{27}$.

Solution -02:-

We have,

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

$\therefore$ 3:4 is an equivalent ratio of 6:15

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

So, 12:16 is an equivalent ratios of 6:8.

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

Solution-03:-

$\frac{12}{20} = \frac{\square}{75} = \frac{?}{\square}$

In order to find the first missing number, we consider the denominator 20 and 75

Lcm of 20 and 75 is 60.

We have, $20 \div 5 = 4$.

So, we divide the Nr & Dr of $\frac{12}{20}$ by 4 to get

$\frac{12}{20} = \frac{12 \div 4}{20 \div 4} = \frac{3}{5}$

Hence, first missing number is 3, Consequently the second ratio is $\frac{3}{5}$

To find the second missing number,

we consider $\frac{7}{?} \; \frac{3}{5} = \frac{9}{\square}$

We have $9 \div 3 = 3$, so we multiply the Nr & Dr of $\frac{3}{5}$ by 3 to get

$\frac{3}{5} = \frac{3 \times 3}{5 \times 3} = \frac{9}{15}$.

Hence, the second missing number is 15.