Exercise 1F

Q5

Answer :

Rational number between 4 and 5 :

$$\frac{1}{2}\left(4+5\right)$$

$$=\frac{9}{2}$$

Rational number between 4 and $\frac{9}{2}$:

$$\frac{1}{2}\left(4+\frac{9}{2}\right)$$

$$=\frac{1}{2}\left(\frac{8+9}{2}\right)$$

$$=\frac{1}{2}\left(\frac{17}{2}\right)$$

$$=\frac{17}{4}$$

Rational number between $\frac{9}{2}$ and 5 :

$$\frac{1}{2}\left(\frac{9}{2}+5\right)$$

$$=\frac{1}{2}\left(\frac{9+10}{2}\right)$$

$$=\frac{19}{4}$$

We know :

$$4<\frac{17}{4}<\frac{9}{2}<\frac{19}{4}<5$$

Q6

Answer :

Rational number between $\frac{2}{3}$ and $\frac{3}{4}$:

$\frac{1}{2}\left(\frac{2}{3}+\frac{3}{4}\right)$

$=\frac{1}{2}\left(\frac{8+9}{12}\right)$

$=\frac{17}{24}$

We know :

$\frac{2}{3}<\frac{17}{24}<\frac{3}{4}$

Rational number between $\frac{2}{3}$ and $\frac{17}{24}$:

$\frac{1}{2}\left(\frac{2}{3}+\frac{17}{24}\right)$

$=\frac{1}{2}\left(\frac{16+17}{24}\right)$

$=\frac{1}{2}\left(\frac{33}{24}\right)$

$=\frac{33}{48}=\frac{33\div 3}{48\div 3}=\frac{11}{16}$

Rational number between $\frac{17}{24}$ and $\frac{3}{4}$:

$\frac{1}{2}\left(\frac{17}{24}+\frac{3}{4}\right)$

$=\frac{1}{2}\left(\frac{17+18}{24}\right)$

$=\frac{1}{2}\left(\frac{35}{24}\right)$

$=\frac{35}{48}$

We know :

$\frac{2}{3}<\frac{11}{16}<\frac{17}{24}<\frac{35}{48}<\frac{3}{4}$

Thus, the three rational numbers are $\frac{11}{16}$, $\frac{17}{24}$ and $\frac{35}{48}$.

Q7

Answer :

We may write :

$-1=\frac{-10}{10}$

and

$2=\frac{20}{10}$

Rational numbers between -1 and 2 :

$\frac{-9}{10}, \frac{-8}{10}, \frac{-7}{10}, \frac{-6}{10}, \frac{-5}{10}, \frac{-4}{10}, \ldots, \frac{14}{10}, \frac{15}{10}, \frac{16}{10}, \frac{17}{10}, \frac{18}{10}$ and $\frac{19}{10}$

We can take any 12 numbers out of these.

********** END **********