



PUBLIC SCHOOL DARBHANGA

SESSION (2020-21)
CLASS-VIII
MATHEMATICS
RATIONAL NUMBERS
ANSWER KEY

1. Write five rational numbers which are smaller than 2.

Solution:

The number 2 can be written as $\frac{20}{10}$.

Hence, we can say that, the five rational numbers which are smaller than 2 are:

$$\frac{2}{10}, \frac{5}{10}, \frac{10}{10}, \frac{15}{10}, \frac{19}{10}$$

2. Find ten rational numbers between $-\frac{2}{5}$ and $\frac{1}{2}$.

Solution:

Let us make the denominators same, say 50.

$$\frac{-2}{5} \Rightarrow \frac{-2 \times 10}{5 \times 10} = \frac{-20}{50}$$

$$\frac{1}{2} \Rightarrow \frac{1 \times 25}{2 \times 25} = \frac{25}{50}$$

Ten rational numbers between $-\frac{2}{5}$ and $\frac{1}{2}$ = ten rational numbers between $-\frac{20}{50}$ and $\frac{25}{50}$

\therefore , ten rational numbers between $-\frac{20}{50}$ and $\frac{25}{50}$ = $-\frac{18}{50}, -\frac{15}{50}, -\frac{5}{50}, -\frac{2}{50}, \frac{4}{50}, \frac{5}{50}, \frac{8}{50}, \frac{12}{50}, \frac{15}{50}, \frac{20}{50}$

3. Find five rational numbers between.

(i) $\frac{2}{3}$ and $\frac{4}{5}$

(ii) $\frac{-3}{2}$ and $\frac{5}{3}$

(iii) $\frac{1}{4}$ and $\frac{1}{2}$

Solution:

(i) $\frac{2}{3}$ and $\frac{4}{5}$

Let us make the denominators same, say 60.

i.e., $\frac{2}{3}$ and $\frac{4}{5}$ can be written as:

$$\frac{2}{3} \Rightarrow \frac{2 \times 20}{3 \times 20} = \frac{40}{60}$$

$$\frac{4}{5} \Rightarrow \frac{4 \times 12}{5 \times 12} = \frac{48}{60}$$

Five rational numbers between $\frac{2}{3}$ and $\frac{4}{5}$

\therefore , Five rational numbers between $\frac{2}{3}$ and $\frac{4}{5}$ = five rational numbers between $\frac{40}{60}$ and $\frac{48}{60}$
 $\frac{41}{60}, \frac{42}{60}, \frac{43}{60}, \frac{44}{60}, \frac{45}{60}$

(ii) $\frac{-3}{2}$ and $\frac{5}{3}$

Let us make the denominators same, say 6.

i.e., $\frac{-3}{2}$ and $\frac{5}{3}$ can be written as:

$$\frac{-3}{2} \Rightarrow \frac{-3 \times 3}{2 \times 3} = \frac{-9}{6}$$

$$\frac{5}{3} \Rightarrow \frac{5 \times 2}{3 \times 2} = \frac{10}{6}$$

Five rational numbers between $\frac{-3}{2}$ and $\frac{5}{3}$ = five rational numbers between $\frac{-9}{6}$ and $\frac{10}{6}$

∴, Five rational numbers between $\frac{-9}{6}$ and $\frac{10}{6}$ = $\frac{-1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}$

(iii) $\frac{1}{4}$ and $\frac{1}{2}$

Let us make the denominators same, say 24.

i.e., $\frac{1}{4}$ and $\frac{1}{2}$ can be written as:

$$\frac{1}{4} \Rightarrow \frac{1 \times 6}{4 \times 6} = \frac{6}{24}$$

$$\frac{1}{2} \Rightarrow \frac{1 \times 12}{2 \times 12} = \frac{12}{24}$$

Five rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$ = five rational numbers between $\frac{6}{24}$ and $\frac{12}{24}$

∴, Five rational numbers between $\frac{6}{24}$ and $\frac{12}{24}$ = $\frac{7}{24}, \frac{8}{24}, \frac{9}{24}, \frac{10}{24}, \frac{11}{24}$

4. Write five rational numbers greater than -2.

Solution:

-2 can be written as $\frac{-20}{10}$

Hence, we can say that, the five rational numbers greater than -2 are

$$\frac{-10}{10}, \frac{-5}{10}, \frac{-1}{10}, \frac{5}{10}, \frac{7}{10}$$

5. Find ten rational numbers between $\frac{3}{5}$ and $\frac{3}{4}$.

Solution:

Let us make the denominators same, say 80.

$$\frac{3}{5} \Rightarrow \frac{3 \times 16}{5 \times 16} = \frac{48}{80}$$

$$\frac{3}{4} \Rightarrow \frac{3 \times 20}{4 \times 20} = \frac{60}{80}$$

Ten rational numbers between $\frac{3}{5}$ and $\frac{3}{4}$ = ten rational numbers between $\frac{48}{80}$ and $\frac{60}{80}$

∴, ten rational numbers between are $\frac{49}{80}, \frac{50}{80}, \frac{51}{80}, \frac{52}{80}, \frac{53}{80}, \frac{54}{80}, \frac{55}{80}, \frac{56}{80}, \frac{57}{80}, \frac{58}{80}$

