

CBSE Class -VIII Mathematics

NCERT Solutions

CHAPTER - 1

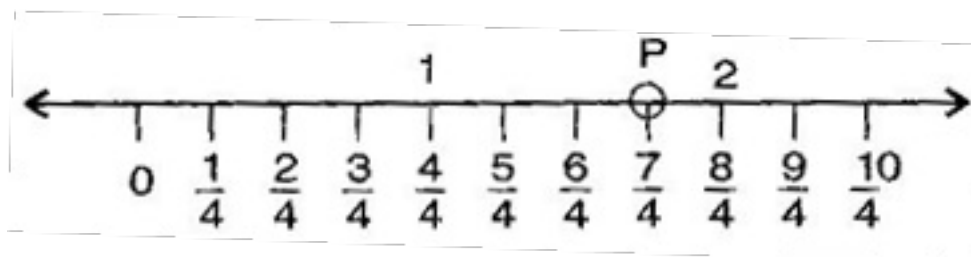
Rational Numbers (Ex. 1.2)

1. Represent these numbers on the number line:

(i) $\frac{7}{4}$

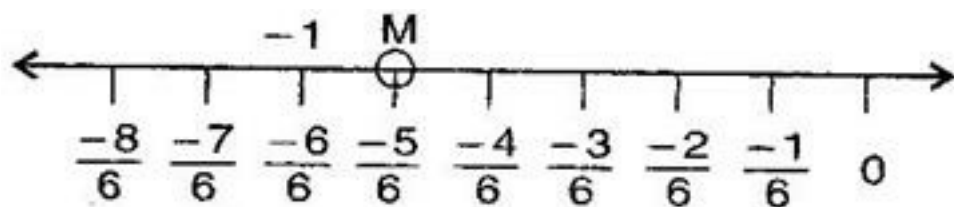
(ii) $\frac{-5}{6}$

Ans. (i) $\frac{7}{4} = 1\frac{3}{4}$



Here, P $1\frac{3}{4} = \frac{7}{4}$

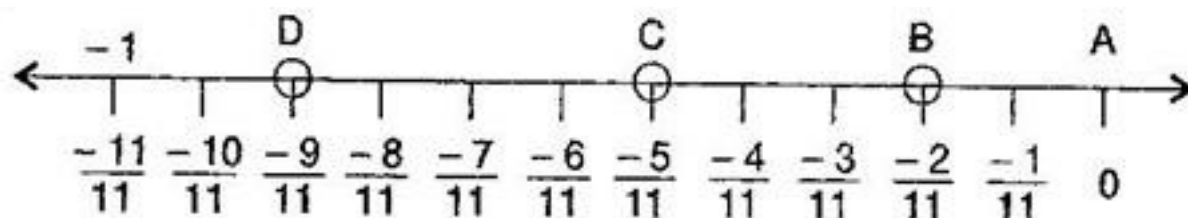
(ii) $\frac{-5}{6}$



Here, M = $\frac{-5}{6}$

2. Represent $\frac{-2}{11}, \frac{-5}{11}, \frac{-9}{11}$ on the number line.

Ans. Here, B = $\frac{-2}{11}$, C = $\frac{-5}{11}$ and D = $\frac{-9}{11}$



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

Ans. $\frac{1}{3}, \frac{1}{4}, \frac{1}{2}, \frac{-1}{2}, \frac{-1}{5}$ and so on.

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

Ans. $\frac{-2}{5}$ and $\frac{1}{2}$

Here, L.C.M. of 5 and 2 is 10.

$$\therefore \frac{-2}{5} \times \frac{2}{2} = \frac{-4}{10} \text{ and } \frac{1}{2} \times \frac{5}{5} = \frac{5}{10}$$

$$\text{Again, } \frac{-4}{10} \times \frac{2}{2} = \frac{-8}{20} \text{ and } \frac{5}{10} \times \frac{2}{2} = \frac{10}{20}$$

\therefore Ten rational number between $\frac{-2}{5}$ and $\frac{1}{2}$ are $\frac{-7}{20}, \frac{-6}{20}, \frac{-5}{20}, \frac{-4}{20}, \frac{-3}{20}, \frac{-2}{20}, \frac{-1}{20}, 0, \frac{1}{20}, \frac{2}{20}$

5. 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 $\frac{1}{2}$

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

L.C.M. of 3 and 5 is 15.

$$\therefore \frac{2}{3} \times \frac{5}{5} = \frac{10}{15} \text{ and } \frac{4}{5} \times \frac{3}{3} = \frac{12}{15}$$

$$\text{Again } \frac{10}{15} \times \frac{4}{4} = \frac{40}{60} \text{ and } \frac{12}{15} \times \frac{4}{4} = \frac{48}{60}$$

$$\therefore \text{Five rational numbers between } \frac{2}{3} \text{ and } \frac{4}{5} \text{ are } \frac{41}{60}, \frac{42}{60}, \frac{43}{60}, \frac{44}{60}, \frac{45}{60}.$$

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

L.C.M. of 2 and 3 is 6.

$$\therefore \frac{-3}{2} \times \frac{3}{3} = \frac{-9}{6} \text{ and } \frac{5}{3} \times \frac{2}{2} = \frac{10}{6}$$

$$\therefore \text{Five rational numbers between } \frac{-3}{2} \text{ and } \frac{5}{3} \text{ are } \frac{-8}{6}, \frac{-7}{6}, 0, \frac{1}{6}, \frac{2}{6}.$$

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

L.C.M. of 4 and 2 is 4.

$$\therefore \frac{1}{4} \times \frac{1}{1} = \frac{1}{4} \text{ and } \frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$$

$$\text{Again } \frac{1}{4} \times \frac{8}{8} = \frac{8}{32} \text{ and } \frac{2}{4} \times \frac{8}{8} = \frac{16}{32}$$

$$\therefore \text{Five rational numbers between } \frac{1}{4} \text{ and } \frac{1}{2} \text{ are } \frac{9}{32}, \frac{10}{32}, \frac{11}{32}, \frac{12}{32}, \frac{13}{32}.$$

6. Write 5 rational numbers greater than -2 .

Ans. Five rational numbers greater than -2 are:

$$\frac{-3}{2}, -1, \frac{-1}{2}, 0, \frac{1}{2}$$

[Other rational numbers may also be possible]

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

$$\text{Ans. } \frac{3}{5} \text{ and } \frac{3}{4}$$

L.C.M. of 5 and 4 is 20.

$$\therefore \frac{3}{5} \times \frac{4}{4} = \frac{12}{20} \text{ and } \frac{3}{4} \times \frac{5}{5} = \frac{15}{20}$$

$$\text{Again } \frac{12}{20} \times \frac{8}{8} = \frac{96}{160} \text{ and } \frac{15}{20} \times \frac{8}{8} = \frac{120}{160}$$

$$\therefore \text{Ten rational numbers between } \frac{3}{5} \text{ and } \frac{3}{4} \text{ are:}$$

$$\frac{97}{160}, \frac{98}{160}, \frac{99}{160}, \frac{100}{160}, \frac{101}{160}, \frac{102}{160}, \frac{103}{160}, \frac{104}{160}, \frac{105}{160}, \frac{106}{160}$$