

Exercise 1.2

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1. Represent these numbers on the number line.

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

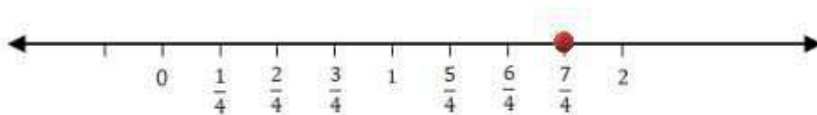
(ii)  $-\frac{5}{6}$

**Solution:**

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

Divide the line between the whole numbers into 4 parts. i.e., divide the line between 0 and 1 to 4 parts, 1 and 2 to 4 parts and so on.

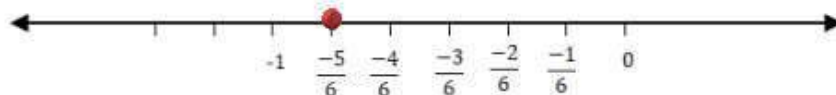
Thus, the rational number  $\frac{7}{4}$  lies at a distance of 7 points away from 0 towards positive number line.



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

Divide the line between the integers into 6 parts. i.e., divide the line between 0 and -1 to 6 parts, -1 and -2 to 6 parts and so on. Here since the numerator is less than denominator, dividing 0 to -1 into 6 part is sufficient.

Thus, the rational number  $-\frac{5}{6}$  lies at a distance of 5 points, away from 0, towards negative number line



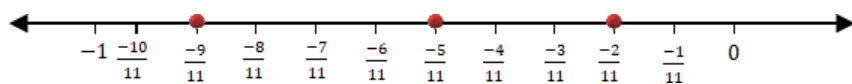
2. Represent  $-\frac{2}{11}$ ,  $-\frac{5}{11}$ ,  $-\frac{9}{11}$  on a number line.

**Solution:**

Divide the line between the integers into 11 parts.

Thus, the rational numbers  $-\frac{2}{11}$ ,  $-\frac{5}{11}$ ,  $-\frac{9}{11}$  lies at a distance of 2, 5, 9 points away from 0, towards negative number line respectively.

## NCERT Solution For Class 8 Maths Chapter 1- Rational Numbers



**3. 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:

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

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

**Solution:**

Let us make the denominators same, say 50.

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

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

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  $\frac{25}{50}$  =  $-\frac{18}{50}, -\frac{15}{50}, -\frac{5}{50}, -\frac{2}{50}, \frac{4}{50}, \frac{5}{50}, \frac{8}{50}, \frac{12}{50}, \frac{15}{50}, \frac{20}{50}$

**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  $\frac{1}{2}$

**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:

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

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

Five rational numbers between  $\frac{2}{3}$  and  $\frac{4}{5}$  = five rational numbers between  $\frac{40}{60}$  and  $\frac{48}{60}$

Therefore, 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:

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

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

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

## NCERT Solution For Class 8 Maths Chapter 1- Rational Numbers

Therefore, Five rational numbers between  $-9/6$  and  $10/6 = -1/6, 2/6, 3/6, 4/6, 5/6$

(iii)  $1/4$  and  $1/2$

Let us make the denominators same, say 24.

i.e.,  $1/4$  and  $1/2$  can be written as:

$$1/4 = (1 \times 6)/(4 \times 6) = 6/24$$

$$1/2 = (1 \times 12)/(2 \times 12) = 12/24$$

Five rational numbers between  $1/4$  and  $1/2 =$  five rational numbers between  $6/24$  and  $12/24$

Therefore, Five rational numbers between  $6/24$  and  $12/24 = 7/24, 8/24, 9/24, 10/24, 11/24$

**6. Write five rational numbers greater than -2.**

**Solution:**

-2 can be written as  $-20/10$

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

$-10/10, -5/10, -1/10, 5/10, 7/10$

**7. Find ten rational numbers between  $3/5$  and  $3/4$ ,**

**Solution:**

Let us make the denominators same, say 80.

$$3/5 = (3 \times 16)/(5 \times 16) = 48/80$$

$$3/4 = (3 \times 20)/(4 \times 20) = 60/80$$

Ten rational numbers between  $3/5$  and  $3/4 =$  ten rational numbers between  $48/80$  and  $60/80$

Therefore, ten rational numbers between  $48/80$  and  $60/80 = 49/80, 50/80, 51/80, 52/80, 54/80, 55/80, 56/80, 57/80, 58/80, 59/80$