

**Rational Numbers between two Rational Numbers**

We can insert infinitely many rational numbers between any two rational numbers.

Ex: Between -4/7 and 2/7, the four rational numbers are -3/7, -2/7, -1/7, 0/7 and 1/7.

To insert rational numbers between two rational numbers, we have to first convert them with same denominators and then find the rational numbers between them.

**Problem: List five rational numbers between:**

**(i) -1 and 0                           (ii) -2 and -1                (iii) -4/5 and -2/3                   (iv) -1/2 and 2/3**

**Solution:**

**(i)** -1 and 0

     Let us write -1 and 0 as rational numbers with denominator 6.

=> -1 = -6/6 and 0 = 0/6

So, -6/6 < -5/6 < -4/6 < -3/6 < -2/6 < -1/6 < 0/6

=> -1 < -5/6 < -2/3 < -1/2 < -1/3 < -1/6 < 0

Hence, the five rational numbers between -1 and 0 are:

-5/6 < -2/3 < -1/2 < -1/3 < -1/6

**(ii)** -2 and -1

Let us write -2 and -1 as rational numbers with denominator 6.

=> -2 = -12/6 and -1 = -6/6

So, -12/6 < -11/6 < -10/6 < -9/6 < -8/6 < -7/6 < -6/6

=> -2 < -11/6 < -5/3 < -3/2 < -4/3 < -7/6 < -1

Hence, the five rational numbers between -2 and -1 are:

-2 < -11/6 < -5/3 < -3/2 < -4/3 < -7/6 < -1

**(iii)** -4/3 and -2/3

Let us write -4/3 and -2/3 as rational numbers with the same denominator.

=> -4/5 = -36/45 and -2/3 = -30/45

=> -36/45 < -35/45 < -34/45 < -33/45 < -32/45 < -31/45 < -30/45

=> -4/5 < -7/9 < -34/45 < -11/15 < -32/45 < -31/45 < -2/3

Hence, the five rational numbers between -4/5 and -2/3 are:

-4/5 < -7/9 < -34/45 < -11/15 < -32/45 < -31/45 < -2/3