

Co-ordinator

Std - VIII Sub - Maths

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Chpt - 2 (Rational Numbers)

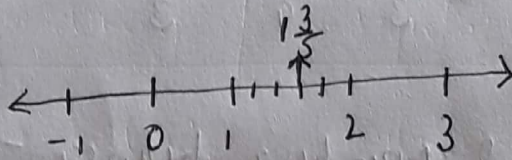
Rational number. $\frac{p}{q}$, $q \neq 0$

Positive, Negative, Equivalent Rational Numbers.

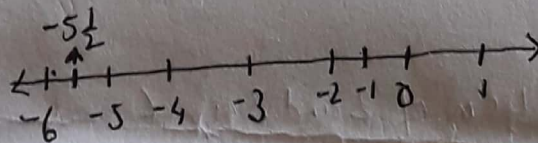
$\frac{5}{7}, \frac{8}{11}, \frac{-11}{-13}, \frac{-2}{5}, \frac{6}{-9}, \frac{2}{3}$ $\left(\frac{2 \times 4}{3 \times 4} = \frac{8}{12} \right)$

Representation of Rational Numbers on the Number line

i) $\frac{8}{5} = 1\frac{3}{5}$



iii) $-\frac{11}{2} = -5\frac{1}{2}$



Rational Numbers in standard form / lowest term

i) $\frac{-20}{50} \Rightarrow \frac{-20 \cancel{2}}{50 \cancel{5}} = \frac{-2}{5}$

ii) $\frac{-44 \cancel{22}}{76 \cancel{38} 19} = \frac{-11}{19}$

Comparison of Rational Numbers

Before that i) $\frac{2}{5} < \frac{3}{5}$ If denominator is same, the numerator which is bigger that fraction is greater.

ii) $\frac{3}{7} > \frac{3}{8}$ If numerator is same, the denominator which is smaller that fraction is greater.

which fraction is greater

write in descending order

i) $\frac{1}{3}, -\frac{2}{9}, -\frac{4}{3}$

Soln. Take LCM of 3, 9, 3

$$\begin{array}{r} 3 \overline{) 3, 9, 3} \\ 1, 3, 1 \\ \hline = 9 \end{array}$$

$$\frac{1 \times 3}{3 \times 3} = \frac{3}{9}$$

$$\frac{-2 \times 1}{9 \times 1} = \frac{-2}{9}$$

$$\frac{-4 \times 3}{3 \times 3} = \frac{-12}{9}$$

Descending order

$$\frac{3}{9}, -\frac{2}{9}, -\frac{12}{9}$$

so $\frac{1}{3}, -\frac{2}{9}, -\frac{4}{3}$ Ans.

Q) Give four rational numbers between $-\frac{1}{2}$ and $\frac{2}{3}$

Soln. $-\frac{1}{2}$ and $\frac{2}{3}$ LCM of 2 and 3 is 6.

$$\frac{-1 \times 3}{2 \times 3} = \frac{-3}{6} \quad \left| \quad \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$

Four rational numbers are

$$-\frac{3}{6}, \left[-\frac{2}{6}, -\frac{1}{6}, \frac{0}{6}, \frac{1}{6}, \frac{2}{6}, \frac{3}{6} \right], \frac{4}{6}$$

(You can write any four rational numbers within bracket)

Find

i) $-2\frac{1}{6} - 6$

Soln. $-\frac{13}{6} - \frac{6}{1}$

$$\frac{-13 - 36}{6}$$

$$= -\frac{49}{6} = -8\frac{1}{6} \text{ Ans.}$$

Find the value of

ii) $-\frac{7}{12} \div \left(-\frac{2}{13}\right)$

Soln. $-\frac{7}{12} \times \frac{13}{-2}$

$$= \frac{91}{24} \Rightarrow \frac{91}{24} \text{ or } 3\frac{19}{24} \text{ Ans.}$$

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Terminating and non-terminating decimal.

i) $\frac{22}{25}$ 25) 220 (0.88
 $\begin{array}{r} 200 \\ 200 \\ 200 \\ \hline \end{array}$

ii) $\frac{1}{3}$ 3) 10 (0.333...
 $\begin{array}{r} 10 \\ 9 \\ \hline 10 \\ 9 \\ \hline 10 \\ 9 \\ \hline \end{array}$

(Squaring)
 $(11-99)$
 $0.\bar{3}$ or $0.\dot{3}$
 (non-terminating)