RATIONAL NUMBER

RECIPROCAL OF RATIONAL NUMBER

RECIPROCAL OR MULTIPLICATIVE INVERSE

If $\frac{a}{b}$ be a rational number then $\frac{b}{a}$ is called multiplicative inverse if : $\frac{a}{b} \times \frac{b}{a} = 1$ **Ex.1** Is $\frac{8}{9}$ the multiplicative inverse of $-1\frac{1}{8}$? Why or why not? **Sol.** $-1\frac{1}{8} = \frac{-9}{8}$ $\frac{8}{9} \times \left(-1\frac{1}{8}\right) = \frac{8}{9} \times \frac{-9}{8} = -1 \neq 1$ $\frac{8}{9}$ is not the multiplicate inverse of $-1\frac{1}{8}$.

- (i) Zero has no reciprocal.
- (ii) Reciprocal of 1 is 1.
- (iii) Reciprocal of -1 is -1.

ABSOLUTE VALUE OF A RATIONAL NUMBER

Absolute value of a rational number is its numerical value (value without signs)

For example,
$$\left| -\frac{3}{5} \right| = \frac{3}{5} \quad \& \left| \frac{7}{9} \right| = \frac{7}{0}$$

Properties:

The absolute value of the sum of two rational numbers is always less than or equal to the sum of the absolute values of the given numbers.

$$||x+y| \leq |x|+|y|$$

CLASS 8

The absolute value of the product of two rational numbers is equal to the product of the absolute values of the given numbers.

 $|x \times y| = |x| \times |y|$