Mathematics · Class VIII

Things to Remember

Chapter - 1 Rational Number

1) Whole numbers are closed under addition and multiplication.

2) Integers are closed under addition and multiplication.
3) Integers are closed under subtraction
4) Rational numbers are closed under addition and multiplication.

5) Commutativity Property : $a+b = b+a$

6) Addition and multiplication are commutative.

7) Associativity Property : $a \times (b \times c) = (a \times b) \times c$

8) Addition and multiplication are associative.

9) The role of zero (0) : $a+0 = 0+a = a$

10) The role of 1 : $a \times 1 = 1 \times a = a$

11) Negative of a number : $a + (-a) = (-a) + a = 0$,
so, a is the negative or additive inverse of $-a$
and vice-versa ($-a$ is negative or additive inverse of a).

12) Reciprocal : We say that a rational number $\frac{c}{d}$ is called the reciprocal or multiplicative inverse of another rational number $\frac{a}{b}$ if $\frac{a}{b} \times \frac{c}{d} = 1$.

Zero has no reciprocal.

13) Distributive Property : $a \times (b+c) = ab + ac$

$a \times (b-c) = ab - ac$

14) Representation of Rational Numbers on the Number line

15) Rational numbers between two Rational Numbers:
We get countless rational numbers between any two given rational numbers.

Method-1 : Convert rational numbers with same denominator.

Method-2 : We find the mean of the given rational numbers.
If a and b are two rational numbers, then $\frac{a+b}{2}$ is a rational number between a and b, such that $a < \frac{a+b}{2} < b$.