

PROPERTIES OF REAL NUMBERS:-

I ADDITION:-

1) COMMUTATIVE: $a+b = b+a$

2) ASSOCIATIVE: $(a+b)+c = a+(b+c)$

3. ADDITION:-
(ZERO)

$a+0 = 0+a = a$

4. INVERSE:-

$a+(-a) = (-a)+a = 0$

II MULTIPLICATION:-

1) COMMUTATIVE:- $a \cdot b = b \cdot a$

2) ASSOCIATIVE:- $(a \cdot b) \cdot c = a \cdot (b \cdot c)$

3) MULTIPLICATIVE PROPERTY OF ZERO: $a \cdot 0 = 0 \cdot a = 0$

4) INVERSE PROPERTY OF MULTIPLICATION
 $a \cdot \frac{1}{a} = \frac{1}{a} \cdot a = 1$; $a \neq 0$

5) MULTIPLICATIVE PROPERTY OF ONE:-
 $a \cdot 1 = 1 \cdot a = a$

III DISTRIBUTIVE PROPERTY:-
 $a(b+c) = ab+ac$

$3+2 = 2+3 = 5 = 5$

$(3+4)+5 = 3+(4+5)$
 $7+5 = 3+9$
 $12 = 12$

$3+0 = 0+3 = 3$

$4+(-4) = (-4)+4 = 0$

$3(-2) = (-2)(3)$
 $-6 = -6$

$(3 \cdot 4) \cdot 5 = 3 \cdot (4 \cdot 5)$
 $12 \cdot 5 = 3 \cdot 20$
 $60 = 60$

$8 \cdot 0 = 0 \cdot 8 = 0$

$(4) \left(\frac{1}{4}\right) = \left(\frac{1}{4}\right)(4) = 1$

$5 \cdot 1 = 1 \cdot 5 = 5$

$3(4+5) = 3 \cdot 4 + 3 \cdot 5$
 $3 \cdot 9 = 12 + 15$
 $27 = 27$