Integers

Integers: All number whether it is positive, negative including zero is called Integers.

Note Zero is an integer which is neither positive or negative"*

There is no greatest or smallest integer.

Addition of Integers:

i)Having the same sign:

i)if both are having the +ive sign, add the number and put the +ive sign.

ii)if both are having -ve sign, add the number and put -ve sign.

2)Having the opposite sign: If the integers are having opposite signs we just subtract the number and put the sign of greater no.

Properties of Addition:

a)Closure Property: Sum of two integers is always an integer.

Example: 2+5=7

In the above case, all numbers are integers.

b)Commutative Property: If we add two integers but if we change the order of no answer will be the same.

Example: 8+9=9+8

17=17

c) Associative Property: If we change the order of three number, the addition will remain unchanged.

Example: a+(b+c)=(a+b)+c

2+(3+5)=(2+3)+5

10=10

d) Additive Identity: When we add 0 to any number ,addition remains same .In this case 0 is the additive identity.

Example: a+0=a

4+0=4

e) Additive Inverse: When we add two same number with an opposite sign, the answer comes to zero.

Exampl9+(-9)=0

Subtraction of Integers:

Subtraction is the inverse operation of integers.

Properties of Subtraction of Integers:

a) Closure Property: Difference of two integers is always an integer.

Example: 6-4=2

in the above example, all are integers.

b) Commutative Property: This property is not followed in subtraction.

Example 6-5 is not equal to 5-6.

c) Associatative Property: This property is not followed in subtraction.

Example: 6-(5-8) is equal to (6-5)-8.

Multiplication of Integers:

Multiplication means to calculate the product of two numbers but in multiplication sign plays an important role.

i) If the sign of both numbers is same(++,--), the sign of product is positive.

ii) If the sign of both numbers(-+,+-), the sign of product is negative.

Properties of Multiplication of Integers:

a) Closure Property: Product of two integers is also an integer.

Example: 7X8=72 all are integers.

b) Commutative Property: Product of two numbers is the same if we change the order of number.

Example: 14X5=5X14

70=70

c) Associatative Property: If we have three numbers a,b,c

aX(bXc)=(aXb)Xc

Example: 2X(3X4)=(2X3)X4

2X12=6X4

24=24

d) Distributive Property law of multiplication over Addition: This law is a combination of multiplication and Addition.

aX(b+c)=aXb+axc

Example: 5X(6+8)=5X6+5X8

5X14=30+40

70=70

c)Multiplicative Property: If 1 is multiplied by any number answer will be that number only.

aX1=a

Example: 25X1=25

d)Multiplicative Inverse: When integers is multiplied by its reciprocal then the answer will be 1. This property is known as a multiplicative inverse.

Example: Multiplicative inverse of 25=1/25.

e)Property of Zero: Any integer multiplied by zero gives an answer equal to zero.

Division of Integers:

The division is an inverse operation of multiplication

i) If having the same sign: Both having be positive or negative sign, answer will be positive.

ii) Having the opposite sign: If sign are opposite (+ and - or - and +), then answer will be negative.