B. B. S. S. Sec. School

Class - VII th Sub - Maths

Ch-1 Knowing Our Numbers

Integers →

The group of whole numbers together with negative numbers is called integers i,e, 0, 1, 2, 3, ..., -1, -2

Use of BODMAS →

We use the BODMAS rule to handle the brackets operation. The order of brackets during simplification is bar bracket ¯, small bracket ( ), medium bracket { }, square bracket [ ].

Eg) $12 - [7 - \{16 - (18 - \overline{6 + 3 - 12})\}]$

$= 12 - [7 - \{16 - (18 + 3)\}]$

$= 12 - [7 - \{16 - 21\}]$

$= 12 - [7 - \{-5\}]$

$= 12 - [7 + 5] = 12 - 12 = 0$

Power of Integer → multiply an integer a by n times ~~that~~ means that $a \times a \times a \times a \times \ldots \times a = a^n$ where a is base and n is exponent / power.

Eg - $(-2)^4 = (-2) \times (-2) \times (-2) \times (-2) = 16$

Multiplication And Division Of Integers:

Rules of sign in multiplication of integers.

(i) $(+) \times (+) = +$ (ii) $(-) \times (-) = +$ (iii) $(-) \times (+) = -$

(iv) $(+) \times (-) = -$

Rules of sign in division of integers.

(i) $(+) \div (+) = +$ (ii) $(-) \div (-) = +$ (iii) $(+) \div (-) = -$

(iv) $(-) \div (+) = -$

Note :- Do page No. 10, 14 and 15 in your remaining register of class VI th

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Class - VII Sub maths

Ch-1 Knowing Our Numbers

Topic - Properties Of Integers :-

Properties of integers for addition

Property-1 Closure Property of Addition → The sum of two integers is also an integer

Eg. $(-3) + (2) = -1$

Property 2 - Commutative Law → The sum of two integers remains unchanged, if they interchange their places. i.e., $a+b = b+a$ where a and b are integers.

Eg. $(-3)+2 = -1$

$2+(-3) = -1$ Thus $(-3)+2 = 2+(-3)$

Property 3 - Associative Law → For any three or more integers, it does not matter which two are added first and then their sum is added to the third integer, i.e., $(a+b)+c = a+(b+c)$

Eg. $(-2+5)+4 = -2+(5+4)$

$3+4 = -2+9$

$7 = 7$

Property 4 - If zero is added to any integer, the sum equals the integer, the sum equals the integer itself, i.e., for any integer a, $a+0 = a$

$0+a = a$

Eg. - $5+0 = 5$

$-5+0 = -5$ (0 is the additive identity)

Property-5 For every integer, there exists a unique integer such that their sum is zero. Each of such number is known as the additive inverse of the other, for any integer a, $a+(-a) = 0$

Eg - $3+(-3) = 0$

Properties Of Integers for Multiplication:-

Property 1 - Closure Property Of Multiplication:- The product of two integers is also an inter i,e for any integers a and b, ab is an integer.

Property 2 - Commutative Law → The product of two integers remains the same even if they interchange their places, i,e for any Integers a and b, $ab = ba$

Eg. $2 \times 4 = 4 \times 2$
$8 = 8$

Property 3 - Associative Law → The product of any three or more integers remains the same irrespective of the order in which the multiplication is carried out. i,e. for integers a, b and c, $(ab)c = a(bc)$

Eg. $(-3 \times 4) \times 2 = -3 \times (4 \times 2)$
$-12 \times 2 = -3 \times 8$
$-24 = -24$

Property 4 - The product of any integer and 1 is always the Integer itself, i,e. for any integer a,
$a \times 1 = 1 \times a = a$

Eg. $4 \times 1 = 1 \times 4$
$4 = 4$ (1 is multiplicative identity

Property 5 - The product of any integer and zero is always zero, i,e. for any integer a,
$a \times 0 = 0 \times a = 0$

Eg- $3 \times 0 = 0 \times 3$
$0 = 0$

Property-6 - Distributive Law Over Addition → for any three integers, the product of the first integer and the sum of the other two is equal to the sum of the product of the first and the second, and the product of the first and the third.
$a(b+c) = ab + ac$

$\boxed{\text{Eg}}$-

$= 9 \times (-3 + 6)$

$9 \times -3 + (9 \times 6)$

$-27 + 54$

$= 27$

Note → Do assignment 1.3, 1.4 and Chapter-End Exercises in your note book.