

Integers

Integers are a big collection of numbers which include whole numbers and negative numbers.

Operations with Integers

- Multiplying 2 integers with the same sign, the result will be positive. ($3 * 2 = 6$, $-3*-2 = 6$)
Multiplying 2 integers with different signs, the result will be negative. ($-5 * 3 = -15$)
- Dividing 2 integers with the same sign, the result will be positive. ($6 \div 3 = 2$, $-6 \div -3 = 2$)
Dividing 2 integers with different signs, the result will be negative. ($-15 \div 3 = -5$)
- When we add 2 positive integers, the result will be positive. ($5 + 3 = 8$)
When we add 2 negative integers, the result will be negative. ($-5 + -3 = -8$)
When we add 2 integers with different signs, the result can either be positive or negative. ($-5 + 3 = -2$, $5+ -3 = 2$)
- When we subtract 2 positive integers, the result can either be positive or negative. ($5-3 = 2$, $3-5 = -2$)
When we subtract 2 negative integers, the result can either be positive or negative. ($-5 - -3 = -2$, $-8 - -14 = 6$)
When we subtract 2 integers with different signs, the result can either be positive or negative. ($-5 - 3 = -8$, $5- -3 = 8$)

Properties of Integers

- **Commutative Property**

General : 2 numbers can be added or multiplied in any order.

Commutative Property of Addition : 2 integers can be added in any order, the result will be same. ($3+5 = 5+3$)

Commutative Property of Multiplication : 2 integers can be multiplied in any order, the result will be same. ($3*5 = 5*3$)

Commutative Property of Division : This is not possible with division. When we divide 2 integers in any order, the result may differ. ($6\div 2$ is not equal to $2 \div 6$)

Commutative Property of Subtraction : This is not possible with subtraction. When we subtract 2 integers in any order, the result may differ.

- **Associative Property**

General : 3 or more number can be added or multiplied in any order.

Associative Property of Addition : 3 or more integers can be added in any order.

Associative Property of Multiplication : 3 or more integers can be multiplied in any order.

Associative Property of Division : This is not possible with division. When we divide 3 or more

integers in any order, the result may differ.

Associative Property of Subtraction : This is not possible with subtraction. When we subtract 3 or more integers in any order, the result may differ.

Identities

- **Multiplicative identity :** Any number multiplied by 1, the result will be the same.
- **Additive identity :** Any number added by 0, the result will be the same.