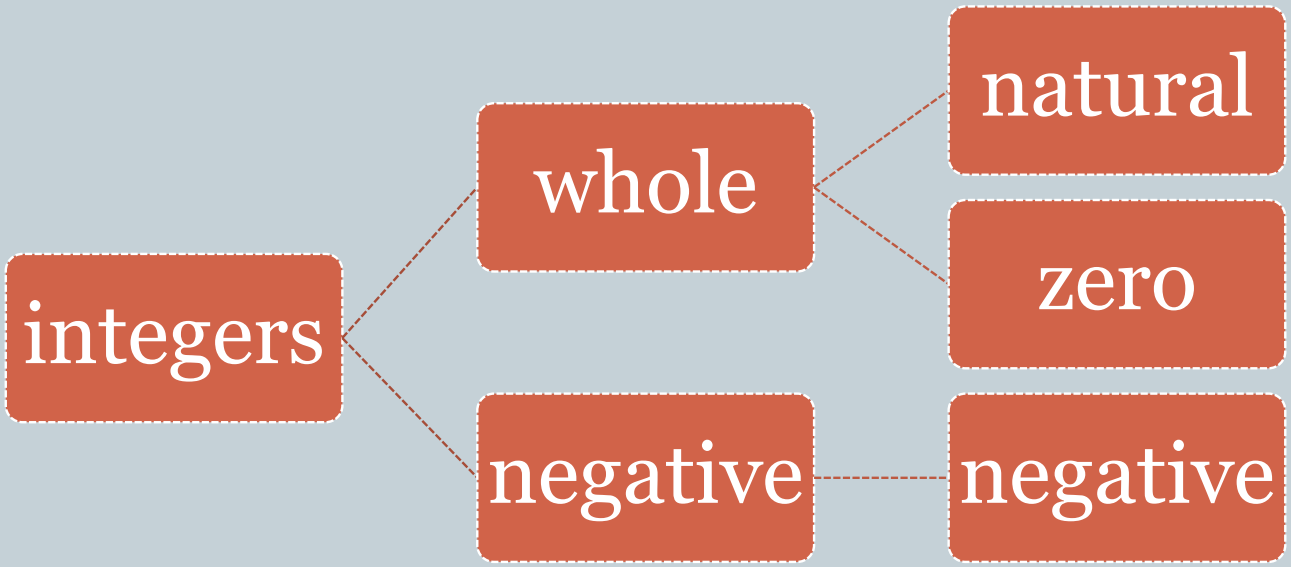
INTEGERS



Integer and things to remember

- It is a collection of whole numbers and their negatives.

  Eg. +5, 5, -6, 6
- For any number , division by 0 is not defined.
- Zero divided by any number is 0
- Additive Inverse : same number with opposite sign

  +3 + (- 3) = 0

Its properties

- Addition & Subtraction
- Closure : If a,b are 2 integers then a+b = c, so c is an integer
- Commutative : If a, b are 2 integers , then

  a +b = b + a, but a-b ≠ b-a, so subtraction is not commutative
- Associative :If a ,b, c are 3 integers , then

  a +(b +c) = (a +b) + c but a -(b -c) ≠ (a -b) - c

Properties

- Additive Identity : If a is an integer, then

  a +0 = 0 +a= 0. So 0 is the additive Identity

- Multiplication/Division
- Closure : Integers are closed under multiplication

  2 × 3 = 6 , so 2, 3 & 6 are integers

- Commutative : If a, b are 2 integers , then

  a × b = a × b , so it is closed under multiplication but not always under division.

Properties

- Associative : If a,b, c are 3 integers , then

  $a \times (b \times c) = (a \times b) \times c$, So it is closed under multiplication but not under division.

- Distributive Property of multiplication over addition/subtraction

  $a \times (b + c) = a \times b + a \times c$

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

- Multiplicative identity = $a \times 1 = a$,so 1 is the multiplicative Identity.

Notes

- If the integer -1 is multiplied even number of times the product is 1.
- If the integer -1 is multiplied odd number of times the product is -1.

Rules of Integer