

Factors and Multiples:

- (i) A factor of a number is an exact divisor of that number.
- (ii) 1 is a factor of every number.
- (iii) every number is a factor of itself.
- (iv) every factor of a number is an exact divisor of that number.
- (v) every factor is less than or equal to the given number.
- (vi) number of factors of a given number are finite.
- (vii) every multiple of a number is greater than or equal to that number.
- (viii) the number of multiples of a given number is infinite.
- (ix) every number is a multiple of itself.

Perfect Number:

A number for which sum of all its factors is equal to twice the number is called a perfect number.

Prime and Composite Numbers:

- (i) The numbers other than 1 whose only factors are 1 and the number itself are called Prime numbers.
- (ii) Numbers having more than two factors are called Composite numbers.
- (iii) 1 is neither a prime nor a composite number.
- (iv) 2 is the smallest prime number which is even.
- (v) every prime number except 2 is odd.

Co-prime Numbers: Two numbers having only 1 as a common factor are called co-prime numbers.

Twin Prime Numbers: Two prime numbers whose difference is 2 are called twin primes.

Tests for Divisibility of Numbers:

- (i) **Divisibility by 2:** a number is divisible by 2 if it has any of the digits 0, 2, 4, 6 or 8 in its ones place.
- (ii) **Divisibility by 3:** if the sum of the digits is a multiple of 3, then the number is divisible by 3.
- (iii) **Divisibility by 4:** a number with 3 or more digits is divisible by 4 if the number formed by its last two digits (i.e. ones and tens) is divisible by 4.
- (iv) **Divisibility by 5:** a number which has either 0 or 5 in its ones place is divisible by 5.
- (v) **Divisibility by 6:** if a number is divisible by 2 and 3 both then it is divisible by 6 also.
- (vi) **Divisibility by 8:** a number with 4 or more digits is divisible by 8, if the number formed by the last three digits is divisible by 8.
- (vii) **Divisibility by 9:** if the sum of the digits of a number is divisible by 9, then the number itself is divisible by 9.
- (viii) **Divisibility by 10:** if a number has 0 in the ones place then it is divisible by 10.
- (ix) **Divisibility by 11:** if the difference between the sum of the digits at odd places (from the right) and the sum of the digits at even places (from the right) of the number is either 0 or divisible by 11, then the number is divisible by 11.

Highest Common Factor:

The Highest Common Factor (HCF) of two or more given numbers is the highest (or greatest) of their common factors. It is also known as Greatest Common Divisor (GCD). Lowest Common Multiple:- The Lowest Common Multiple (LCM) of two or more given numbers is the lowest (or smallest or least) of their common multiples.