UNIT 3 ROOTS AND POWERS

3.1 Factors and Multiples of whole numbers

Factor: A number that divides into another number with no fractions or decimals.

If a number, N is divisible by some number, b, then we say b is a factor of N.

Ex: The factors of 12 are 1, 2, 3, 4, 6, 12

Ex: The factors of 9 are 1, 3, 9

Prime number: A number whose only factors are 1 and itself.

Prime #'s 2, 3, 5, 7, 11, 13, 17, 19, ...

Composite number: A number which is not prime.

Ex: 4, 6, 8, 9, 10, 12, ...

Review of divisibility rules:

Divisible by:

2 → even number (ends with either 0, 2, 4, 6, or 8)

3 → if the sum of the digits is a number which is divisible by 3

Ex: 31452 → the digits add to $3+1+4+5+2=15$

since we know 15 is divisible by 3, the number 31452 is also divisible by 3.

4 → If the last two digits is a number which is divisible by 4.

Ex: 10<u>24</u> → since the last two digits form 24 which we know is divisible by 4, the number 1024 is also divisible by 4.

5 → If the number ends with 0 or 5

6 → If the number is divisible by both 2 and 3, then it is divisible by 6.

<u>Prime Factor</u>: A factor which is prime.

<u>Ex</u>: factors of 12 are 1, 2, 3, 4, 6, 12

prime factors of 12 are 2 and 3