Squares & square roots, cube & cube roots

The square of a number is obtained by multiplying the number itself.

Example

Square of 5 =5 x 5 =25

For any number n, square of n is n x n = n^2

PROPERTIES OF SQUARE NUMBERS

Following are some properties of square numbers:

1. Square of an even natural number is always an even natural number.

e.g., 4 is even and 4^2 =16 is also even

2. Square of an odd natural number is always an odd natural number.

e.g., 7 is odd and 7^2 =49 is also odd

3. Square of a number, positive or negative, is always positive

e.g., i) $(-3)^2$ =9

ii) 5^2 =25

4.Square of a proper fraction is always less than the fraction itself.

e.g., $\frac{2}{5}$ is a proper fraction and $(\frac{2}{5})^2 = \frac{4}{25}$

$\therefore \frac{4}{25} < \frac{2}{5}$

5. The square of a decimal number greater than 1 is greater than the decimal number itself.

e.g., $(1.2)^2$ =1.2 x1.2 =1.44 > 1.2

SQUARE ROOT

The square root of a number is that number which when multiplied by itself is equal to the given number.

Square root of a number n is denoted by √n.

Example

√9 = 3 as 3 x 3 =9

Note

The square root of 9 = ± 3 but $\sqrt{9} = 3$ also, $\sqrt{a^2} = |a|$

PERFECT SQUARE

Numbers which are squares of some number are called perfect squares.

Example

$1 = 1^2$, $4 = 2^2$, $9 = 3^2$,$16 = 4^2$ and so on

$\therefore$1,4,9,16, ….. are all perfect squares.

Note

No perfect square number will end with 2 ,3, 7 ,8 .