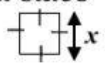**Square of a number:** *Let us consider a square (a four sided closed figure having all sides equal in length), having 'x' as length of its each side. Then what will be its area.*

Area of square   = length of a side × length of a side

= $x \times x$

= x^2 *(index notation)*

| x is the base | 2 is index / exponent |

Square Numbers

Numbers which can be arranged in a square shape - for example:

$1 \times 1 = 1 = 1^2$
$2 \times 2 = 4 = 2^2$
$3 \times 3 = 9 = 3^2$
$4 \times 4 = 16 = 4^2$

1   4   9   16

x^2 **is read as : square of 'x'/ 'x' squared or x raised to the power 2.**

 * *If length of side of a square is 6cm then area of square is 6cm × 6cm = 36cm^2. ∴ 36 is said to be the square of 6.*

So we can conclude that <u>square of a number</u> **means** <u>product of a number with itself.</u>

e.g $1^2 = 1 \times 1 = 1$ $2^2 = 2 \times 2 = 4$ $3^2 = 3 \times 3 = 9$

Perfect Square : *The number which is square of the other number. e.g. $0^2 = 0 \times 0 = 0$, $1^2 = 1 \times 1 = 1$, $2^2 = 2 \times 2 = 4$, $3^2 = 3 \times 3 = 9$ etc. Here 0,1,4,9 are the perfect square numbers.*

Square of negative number: $(-1)^2 = (-1) \times (-1) = 1$, $(-2)^2 = (-2) \times (-2) = 4$ & $(-3)^2 = (-3) \times (-3) = 9$ etc.

So , square of every negative number is always a positive number.

Product of two negative numbers is always a positive number

1. Match each of the following expression to its correct symbolic from.

Statement		Symbolic Form
(i)	(– 5) squared	$(6)^2$
(ii)	Square of + 12	$(0)^2$
(iii)	Square of additive identity	12^2
(iv)	6 raised to the power 2	-5^2
		$(-5)^2$

2. Ayesha solved questions as follows, choose the step where she made mistake.

(i)   Square of $-$ 9   (ii)   Square of + 13

Solution: -9^2 Solution: $(13)^2$

= + 81   = 13 + 13 = 169

3.   **Choose the correct option.**

(i)   Square of (-1) is same as:

(a) opposite of (-1)   (b) + 1   (c) both a& b

(ii)   The number(s) whose square is number itself is/are:

(a) Zero, 1   (b) zero, -1   (c) 1& -1

(iii)   Square of multiplicative identity is :

(a) Zero   (b) -1   (c) +1

(iv)   17 times 17 =

(a) 2× 17   (b) 17^2 (c) 2^{17}

(v)   Shaded Area of given figure can be calculated as:

(a) (52 × 52)cm^2 (b) 4× 52 cm   (c) 52 + 52   (d) 2× 52cm

52cm

(vi) Square of multiplicative identity has same value as:
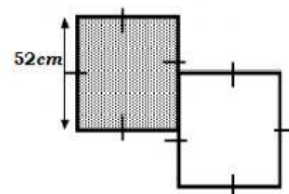
(a) 0 × (− 1)   (b) $\sqrt{1}$ (c) 0+(− 1)

(vii) If $(23)^2 = 529$, it means :

(a) 23 is square root of 529 .

(b) 529 is square of 23

(c)both 'a'& 'b'

(viii)If square root of area of square is 5cm, length of each side is:

(a) 5cm × 5cm   (b) 5cm²   (c) 5cm

4. **Encircle yes or No for each of following statement.**

   (a) **Square of an even number is always an odd number.   yes /No**

   (b) $(length\ of\ each\ side\ of\ square)^2$ **= Area of square   yes /No**

   (c)   **If $a^2 = b$, it means b is square root of a.   yes /No**

   (d)   **The prime factorization of 36 is** $\sqrt[2]{2 \times 2 \times 3 \times 3}$ **yes /No**

5. Choose the imperfect square numbers from following.

(a)   36   (b)324 (c)   81   (d)   0   (e) 6   (f)   100   (g)   31

6. Drag and drop the sqaure or square root to its equivalent number.

9^2	$\sqrt{49}$	6^2	$\sqrt{16}$	$\sqrt{64}$	5^2	$\sqrt{81}$	$\sqrt{100}$

$\sqrt{144}$	$\sqrt{9}$	$\sqrt{25}$	8^2	$\sqrt{36}$	$\sqrt{121}$	7^2

5		81		10	
7		25		64	
36		9		6	
8		4		49	
3		11		12	