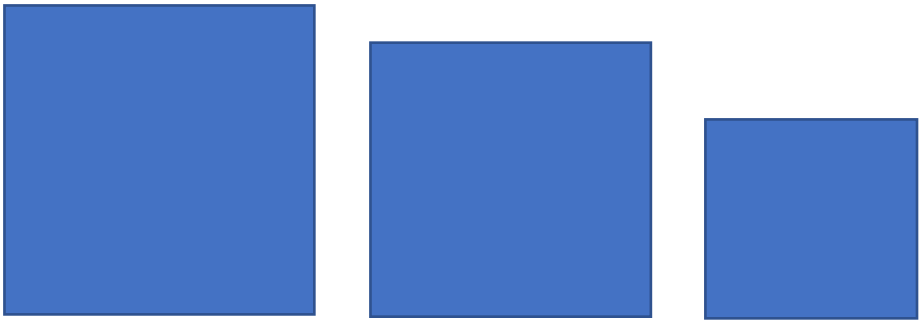
Squares and Square Roots

Visually:



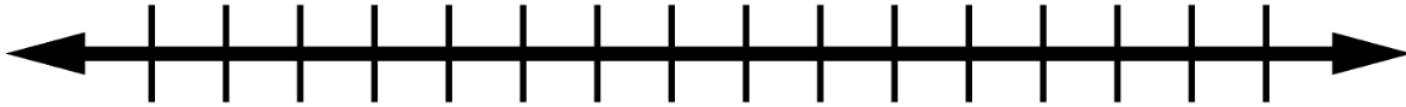
On a multiplication table, the **perfect squares** are located:

	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

So when asked for the **<u>square root</u>** of a number,

$$\sqrt{25}$$

On a numberline:



$\sqrt{16}$

$\sqrt{100}$

$\sqrt{81}$

$\sqrt{\frac{1}{9}}$

$\sqrt{\frac{25}{36}}$

$\sqrt{0.04}$

$\sqrt{2.25}$

If you are square rooting a number that is NOT perfect, then you will just estimate it by looking at the closest perfect square.

$\sqrt{5}$

$\sqrt{75}$

$\sqrt{\frac{1}{15}}$

LateX coding: $latex \sqrt{number}$