

Square Roots

Vocabulary

Square Root	A factor of a number when multiplied by itself yields the number Ex: the square root of 9 is 3 since $3 \cdot 3 = 9$
Squared	Multiplying a number times itself. Ex: $3^2 = 3 \cdot 3 = 9$
Radical sign, $\sqrt{\quad}$	The symbol used to indicate square root. Ex: $\sqrt{9}$
Perfect Square	A whole number that is the product of a factor squared. Ex: 9 is a perfect square since $3^2 = 3 \cdot 3 = 9$.

To find the square root of a number, ask what number squared equals that number.

What squared equals 49?

What number multiplied by itself equals 49?

$$7 \cdot 7 = (7)^2 = 49 \text{ so } \sqrt{49} = 7$$

The $\sqrt{\quad}$ symbol represents ONLY the positive square root $\sqrt{49} = 7$ even though $(-7)^2 = 49$.

TRY:

$\sqrt{25}$

$\sqrt{121}$

$\sqrt{225}$

$-\sqrt{64}$

$\sqrt{64}$

$-\sqrt{25}$

Sometimes, the result isn't an integer. What is $\sqrt{29}$? Since $\sqrt{29}$ is between $\sqrt{25}$ and $\sqrt{36}$, the answer must be between 5 and 6. Since 29 is closer to 25, the answer will be closer to 5 than to 6.

TRY: What is the approximate answer for $\sqrt{7}$?

Root Chart $\sqrt{a} = b$

$b \rightarrow$	2	3	4	5	6	7	8	9	10	11	12	13	14	15
\sqrt{a}	4	9	16	25	36	49	64	81	100	121	144	169	196	225