


SQUARE VS. SQUARE ROOTS

$$x^2 \longleftrightarrow \sqrt{x}$$


What is the opposite of a square?

SOLVING WITH SQUARE ROOTS

1. Isolate the square. ^{"x²"}

2. Take the square root ^{"√"}

3. Simplify Correctly

(± & Look for perfect square)
(biggest)

EXAMPLES:

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

$$(2)^2 = 4$$

$$(-2)^2 = 4$$

$$-2 \cdot -2 = 4$$

$$5x^2 - 1 = 124$$

$$+1 \quad +1$$

$$\frac{5x^2}{5} = \frac{125}{5}$$

$$\sqrt{x} = \sqrt{25}$$

$$x = \pm 5$$

"DON'T FORGET TO USE \pm IN ANSWERS"

SIMPLIFYING SQUARE ROOTS

$$\sqrt{8}$$

Calc.

~~2.828427~~

Hand

$$2\sqrt{2}$$

SIMPLIFYING SQUARE ROOTS

PERFECT SQUARES

$$1^2 = 1$$

$$2^2 = 4$$

$$3^2 = 9$$

$$4^2 = 16$$

$$5^2 = 25$$

$$6^2 = 36$$

$$7^2 = 49$$

$$8^2 = 64$$

$$9^2 = 81$$

$$10^2 = 100$$

$$11^2 = 121$$

$$12^2 = 144$$

Look For biggest
1. perfect square by ∴

2. Rewrite the Root

3. Simplify & Behind
Leave
extra

EXAMPLES:

$$\sqrt{8}$$

$$\sqrt{4 \cdot 2}$$

$$2\sqrt{2}$$

$$\sqrt{27}$$

$$\sqrt{9 \cdot 3}$$

$$3\sqrt{3}$$

$$\sqrt{22}$$

~~$$\sqrt{2 \cdot 11}$$~~

$$\sqrt{22}$$

$$\begin{array}{lll} 1^2 = 1 & 5^2 = 25 & 9^2 = 81 \\ 2^2 = 4 & 6^2 = 36 & 10^2 = 100 \\ 3^2 = 9 & 7^2 = 49 & 11^2 = 121 \\ 4^2 = 16 & 8^2 = 64 & 12^2 = 144 \end{array}$$

EXAMPLES:

$$\sqrt{x^2} = \sqrt{28}$$

$$x = \pm \sqrt{28}$$

$$x = \pm \sqrt{4 \cdot 7}$$

$$x = \pm 2\sqrt{7}$$

$$3x^2 + 1 = 31$$

$$\begin{array}{r} -1 \\ -1 \end{array}$$

$$\frac{3x^2}{3} = \frac{30}{3}$$

$$\sqrt{x^2} = \sqrt{10}$$

$$x = \pm \sqrt{10}$$

"DON'T FORGET TO USE \pm & SIMPLIFY ANSWERS"