




3-1 Square Roots

Perfect Squares

1	4	9	16	25	36	49	64 ...
			4x4	5x5	6x6	7x7	8x8 ...

Inverse - Opposite of SQUARE

$\sqrt{\quad}$ Square root Radical 

• the square root of a number is one of its two equal factors

$$\sqrt{36} = 6 \cdot 6 \text{ so } \sqrt{36} = 6$$

$$6^2 = 36 \text{ Inverse } \sqrt{36} = 6$$

$$7^2 = 49 \quad \sqrt{49} = 7$$

$$10^2 = 100 \quad \sqrt{100} = 10$$

$$3^2 = 9 \quad \sqrt{9} = 3$$

$$2^3 = 8 \quad \sqrt[2]{\quad} \quad \sqrt[3]{8} = 2$$

$\sqrt{\quad}$ = positive $-\sqrt{\quad}$ = negative answer

$$\sqrt{64} = 8$$

$$-\sqrt{64} = -8$$

$$t^2 = \frac{25}{36}$$

D	U
t^2	$\sqrt{t^2}$

$$\sqrt{t^2} = \sqrt{\frac{25}{36}} = \frac{5}{6}$$

$$t = \frac{5}{6} \text{ or } t = -\frac{5}{6}$$

$$\frac{5}{6} \cdot \frac{5}{6} = \frac{25}{36}$$

$$-\frac{5}{6} \cdot -\frac{5}{6} = \frac{25}{36}$$

t variable
two possible solutions

Variables and Square Roots

When an equation uses a variable give both a positive and a negative answer

$$\sqrt{\quad} \text{ positive}$$

$$-\sqrt{\quad} \text{ negative}$$

$$\sqrt{t^2} = \text{both positive and negative}$$

(- · - = +)

$$y^2 = \frac{4}{25}$$

$$\sqrt{y^2} = \sqrt{\frac{4}{25}}$$

$$\frac{D}{y^2} \mid \frac{4}{\sqrt{y^2}}$$

$$y = \frac{2}{5} \text{ or } -\frac{2}{5}$$

$$\pm \frac{2}{5}$$

$$196 = a^2$$

$$\sqrt{196} = \sqrt{a^2}$$

$$\frac{D}{a^2} \mid \frac{14}{\sqrt{a^2}}$$

$$14 = a$$

$$\text{or } -14$$

$$\pm 14$$

$$m^2 = 0.09$$

$$\sqrt{m^2} = \sqrt{0.09}$$

$$\frac{D}{m^2} \mid \frac{0.3}{\sqrt{m^2}}$$

$$m = 0.3 \text{ or } -0.3$$

$$\pm 0.3$$