

## TOPIC: THE SQUARE ROOT PROPERTY

### Using the Square Root Property

◆ Recall: A quadratic equation in standard form is:

Recall

$$ax^2 + bx + c = 0$$

► When we can't solve a quadratic by \_\_\_\_\_, we need to use other methods.

New

#### Square Root Property

$$\text{If } x^2 = k$$

$$\text{then } x =$$

$$x^2 = 16$$

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Use if:  $ax^2 + c = 0$  ( $b = \underline{\hspace{1cm}}$ )

**OR**  $(x + h)^2 = k$

#### EXAMPLE

Solve the quadratic equation using the square root property.

$$(A) \ 4x^2 - 8 = 0$$

$$(B) \ (x + 1)^2 = 4$$

## TOPIC: THE SQUARE ROOT PROPERTY

### PRACTICE

Solve each quadratic equation using the square root property.

(A)  $2y^2 = 54$

(B)  $3x^2 + 3 = 51$

(C)  $(2z - 3)^2 = 16$

### EXAMPLE

If Ethan drops his drone from a height of 58 meters, how long will it take before it hits the ground?

Use  $h = 9.8t^2$ , where  $h$  is the height (in feet) and  $t$  is the time (in seconds).

### EXAMPLE

The area of a square garden is  $196 \text{ ft}^2$ . What is the length of one side of the garden?

### EXAMPLE

Ava is building a ramp that forms a right triangle with the ground. The ramp is 19 ft long (the hypotenuse), and the height from the ground to the platform is 6 ft. How long is the base of the ramp along the ground?