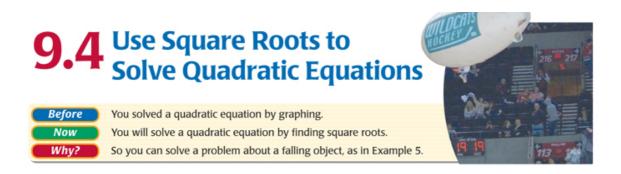
#### Warm-up!

Solve the following equations:

a. 
$$x^{2} = 25$$

b.  $\sqrt{x^{2}} = 81$ 
 $x = -45$ 

c.  $\sqrt{3}x^{2} = 48$ 



**GOAL**: Use square roots to solve quadratic equations.

# What are we doing today?

Solving equations, except adding a new twist: square roots!

Two Easier Ones! Example 1:

$$\frac{1}{2} 2x^2 = 32 \frac{1}{2}$$

$$\sqrt{\chi^2 - 1/4}$$

$$\chi = \frac{1}{2} 4$$

..and of course! Example 2

$$\frac{1}{6} 6a^{2} = 216 \frac{1}{3} \frac{1}{4}$$

$$A^{2} = 36$$

$$A = 46$$

Now What?

Example 3:

$$\sqrt{y^2} = \sqrt{18}$$

Now What?

Example 4:

$$\sqrt{x^2} \sqrt[3]{50}$$

Example 4.

$$\sqrt{x^2} = 50$$

$$x = \pm \sqrt{50}$$

$$x = \pm 7.07$$

Now What?

Example 5:

$$\frac{1}{6}6a^{2} = 72 \frac{1}{6}$$

$$A = \sqrt{12}$$

$$A = \pm \sqrt{12}$$

$$A = \pm 3.16$$

Example 6: Adding a Step

$$3x^{2}-11=7+11$$

$$3x^{2}-11=7+11$$

$$3x^{2}-13=3$$

$$x^{2}-13=3$$

$$x^{2}-1$$

Example 7: You can do it!

$$24x^{12x^{2}-24=36} + 24$$

$$-\frac{1}{2}x^{2} = 60, \frac{1}{2}$$

$$-\frac{1}{2}x^{2} = -\frac{1}{2}x^{2} = -\frac{1}{2}x^{2}$$

$$= \pm 15$$

$$x = \pm 2.23$$

# Next 2-More Difficult! Example 8

$$\frac{1}{3}3(2n-11)^{2} = 75 \cdot \frac{1}{3}$$

$$(2n-11)^{2} = \sqrt{2}$$

$$11 + 2n-11 = \frac{1}{2} + 5 + 11 = \frac{1}{2}$$

$$11 + \frac{1}{2} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{1}{3}$$

$$11 + \frac{1}{2} + \frac{1}{3} + \frac{1}{3} = \frac{1}{3}$$

### Example 9

$$\frac{1}{(4n-3)^2} = 54$$

$$(4n-3)^2 = 54$$

$$(4n-3)^2 = 54$$

$$\frac{1}{(4n-3)^2} = 54$$

#### Homework

Section 9.4: pages 597-598

#'s 6,10,12,32,34,36