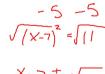
## Solving Quadratic Equations using Square Roots:

- Only when b=0
- Get x<sup>2</sup> or ( )<sup>2</sup> by itself on one side of the = sign
- Take the square root of both sides

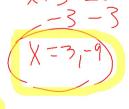
## Solve each using square roots.

5. 
$$9x^2 - 8 = 41$$

7. 
$$(x-7)^2 + 5 = 16$$



$$\begin{array}{c} X-7 \pm \sqrt{11} \\ +7 \\ \times = 7 \pm \sqrt{11} \end{array}$$



Solve each using square roots:

1. 
$$6x^2 + 7 = 31$$



2. 
$$7x^2 - 8 = 27$$

$$3. \ \ 3x^2 + 38 = 11$$

$$\frac{3x^{2}}{3} = \frac{27}{3}$$
 $x^{2} = -9$ 
Hasso

4. 
$$5x^2 + 7 = 2x^2 + 23$$

$$\sqrt{\frac{16}{3}} = \frac{14}{3} = \frac{44}{3} = \frac{46}{3}$$

## Methods to solve Quadratic Equations:

- 1. Graphing: a. Intersections
  - b. Zeros (x-intercepts)
- 2. Factoring: Only if factorable
- 3. Square Roots: Only if b=0

Solving by graphing:

Method 1: Rewrite equation into Standard Form  $ax^2 + bx + c = 0$ and find the zeros of the function.

Method 2: Graph both sides separately and find the intersections.

Solve this equation.

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

1. Graphing

3. Square Roots

Can't use this method because there is a "b" term.

Solve this system of quadratic equations:

$$y = 4x^2 - 16x + 19$$

$$y = -3x^2 + 12x - 9$$

2. Factoring

1. Graphing

 $4x^{2}-16x+19 = -3x^{2}+12x-9$   $7x^{2}-26x+26 = 0$   $7(x^{2}-4x+4) = 0$   $7(x-2)^{2}=0$ 

3. Square Roots

Can't use this method because there is a "b" term.

there is a "b" term.

Solve this equation.

$$9x^2 - 4x + 15 = 7x^2 - 4x + 27$$

1. Graphing

 $2x^{2}-12=0$ 

2. Factoring

X3-6=0

3. Square Roots  $9\sqrt{2} + 15 = 7x^2 + 2$   $2x^2 - 12$   $9x^2 = 7x^2 + 15$