

## Zero Product Property!

If  $a * b = 0$  then either  $a=0$  or  $b=0$ , or both,  $a \& b = 0$

### Polynomials

- If  $(x+2) * (x+4) = 0$

$$\begin{array}{r} 5x+9=0 \\ -9 \quad -9 \\ \hline 5x = -9 \\ \frac{5x}{5} = \frac{-9}{5} \end{array}$$

- If  $(3x-1) * (5x+9) = 0$

$$\begin{array}{r} 3x-1=0 \\ +1 \quad +1 \\ \hline 3x = 1 \\ \frac{3x}{3} = \frac{1}{3} \end{array} \quad x = \frac{1}{3}$$

then  $(x+2)=0$  or  $(x+4)=0$

$$x = -2 \quad \text{or } x = -4$$

$$(-2, 0) \quad (-4, 0)$$

then  $(3x-1)=0$  or  $(5x+9)=0$

or  $x =$

$$x = \left( \frac{1}{3}, 0 \right)$$

## The Quadratic Formula:

Standard Form of a Parabola: \_\_\_\_\_

Quadratic Formula:  $x =$

☆The  $\pm$  means \_\_\_\_\_  
\_\_\_\_\_.

☆While the factoring and square root methods work with some quadratics but not all,  
this formula will \_\_\_\_\_ work!

What method should I use to solve?

Square Root Method

Factoring

Quadratic Formula

3.  $7(x-3)^2 = 35$

4.  $4x^2 = 36$

5.  $x^2 = 81$

11.  $(x+2)^2 - 6 = 11$

2.  $x^2 + 7x + 12 = 0$

9.  $x^2 - 3x - 28 = 0$

1.  $13 = x^2 + 4x - 9$

6.  $13 = x^2 + 9x + 38$

7.  $3x^2 - 5x - 17 = x - 4$

8.  $14 - 6x - x^2 = 8$

12.  $5x^2 - 7x + 13 = 10$

$$\begin{array}{r} 13 = x^2 + 9x + 38 \\ -13 \quad \quad \quad -13 \\ \hline 0 = x^2 + 9x + 25 \end{array}$$

$$\begin{array}{l} 25 \cdot 1 \\ 5 \cdot 5 \end{array}$$

$$0 = x^2 + 9x + 25$$

$$a=1 \quad b=9 \quad c=25$$

$$y = 6x^2 - 17x + 5$$

$$6 \cdot 5 = 30$$

$$\begin{array}{c} \wedge \\ -2 \quad +15 \\ \hline -17 \end{array} ?$$

Which Method? Factor Why?

	$2x$	$-5$
$3x$	$6x^2$	$-15x$
$-1$	$-2x$	$5$

$$(2x-5)(3x-1) = 0$$

$$\begin{array}{r} 2x-5=0 \\ +5 \quad +5 \\ \hline 2x=5 \\ \frac{2x}{2} = \frac{5}{2} \\ \left(\frac{5}{2}, 0\right) \end{array}$$

$$\begin{array}{r} 3x-1=0 \\ +1 \quad +1 \\ \hline x = \frac{1}{3} \\ \left(\frac{1}{3}, 0\right) \end{array}$$

$$y = 3x^2 - 24$$

Which Method? **SRM** Why? **No x-term**

$$\begin{array}{l|l} 0 = 3x^2 - 24 & \\ +24 & +24 \\ \hline \frac{24}{3} & = \frac{3x^2}{3} \\ \pm\sqrt{8} & = \pm\sqrt{x^2} \end{array}$$

$$\begin{array}{l} 8 \pm 2\sqrt{2} \\ \textcircled{2} \quad 4 \\ \textcircled{\times} \textcircled{\times} \textcircled{\times} \\ (2\sqrt{2}, 0) \\ (-2\sqrt{2}, 0) \end{array}$$

$$y = x^2 + 5x - 10$$

$$-10 + 5x + x^2$$

Which Method?

QF

Why? Not Factorable

$$a = 1 \quad b = 5 \quad c = -10$$

$$X = \frac{-5 \pm \sqrt{(5)^2 - 4(1)(-10)}}{2(1)}$$

$$X = \frac{-5 \pm \sqrt{65}}{2}$$

$$\left( \frac{-5 + \sqrt{65}}{2}, 0 \right)$$
$$\left( \frac{-5 - \sqrt{65}}{2}, 0 \right)$$

**When you're finished with your quiz,  
put in the BLUE bin**

**Please remain quiet until everyone is done**

**Homework is Page 5 in Packet**