

## Bell Ringer

Tuesday 9/25

Given the expression  $2x - 3 + 8x^2 - 4x - 5x^2 + 6$  find the following:

$$3x^2 - 2x + 3$$

1. Standard Form

2. Leading Coefficient

3

3. Name based on degree

4. Name based on number of terms

5. Constant

Quadratic

Trinomial

3

Correct 3.4 Factoring Quadratics green ws

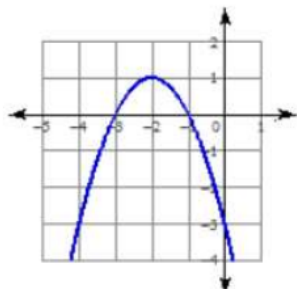
Questions before we correct?

**Math 2**                      **Section 3.4 Worksheet**      **Name** \_\_\_\_\_

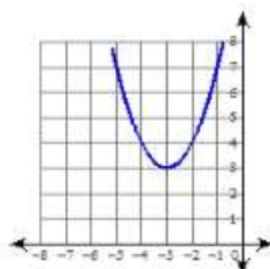
**Solving Quadratics with Graphing and Square Root Method.**

Use the related graph of each equations to determine its solutions.

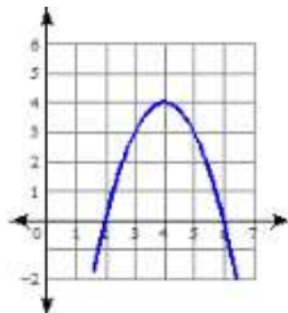
1.  $f(x) = -x^2 - 4x - 3$



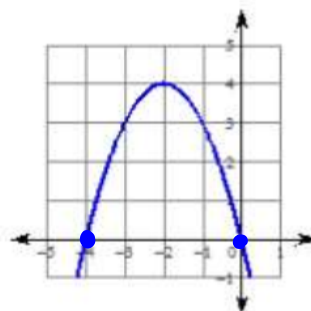
2.  $y = x^2 + 6x + 12$



3.  $f(x) = -x^2 + 8x - 12$

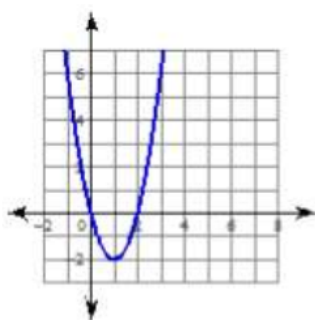


4.  $f(x) = -x^2 - 4x$

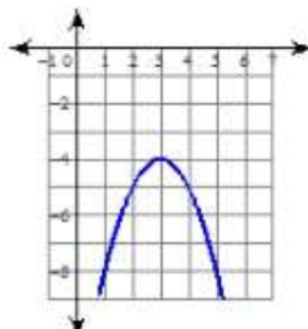


$x = -4, 0$

5.  $y = 2x^2 - 4x$



6.  $f(x) = -x^2 + 6x - 13$



Solve each equation.

7.  $m^2 - 36 = 0$

8.  $y^2 - 225 = 0$

9.  $4d^2 + 16 = 16$

10.  $t^2 = 144$

11.  $3x^2 + 15 = 0$

12.  $2x^2 - 8 = 0$

13.  $(x+4)^2 = 16$

14.  $2(x-1)^2 = 12$

15.  $-3(x-4)^2 = 6$

16.  $-2(x+2)^2 = -10$

17.  $(x+7)^2 = 0$

18.  $-3(x+4)^2 + 7 = 0$

$$\begin{aligned}
 & \frac{-3(x+4)^2}{-3} = \frac{-7}{-3} \\
 & (x+4)^2 = \frac{7}{3} \\
 & x+4 = \pm \sqrt{\frac{7}{3}} \\
 & \quad \quad \quad -4 \quad \quad \quad -4 \\
 & x = -3, -5
 \end{aligned}$$

Math 2

Section 3.4 Worksheet

Name

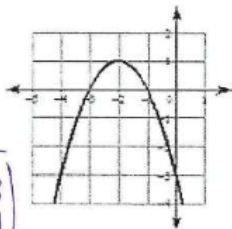
Key

Solving Quadratics with Graphing and Square Root Method.

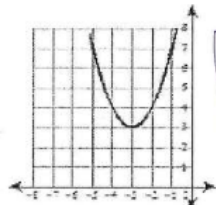
Use the related graph of each equations to determine its solutions.

1.  $f(x) = -x^2 - 4x - 3$

2.  $y = x^2 + 6x + 12$



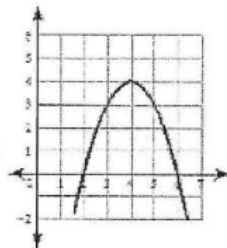
$x = -3$   
 $x = -1$



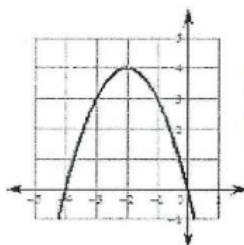
No real solutions

3.  $f(x) = -x^2 + 8x - 12$

4.  $f(x) = -x^2 - 4x$



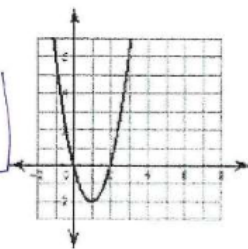
$x = 2$   
 $x = 6$



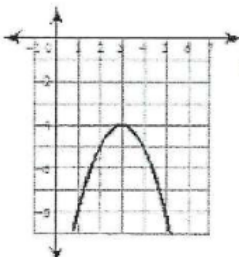
$x = -4$   
 $x = 0$

5.  $y = 2x^2 - 4x$

6.  $f(x) = -x^2 + 6x - 13$



$x = 0$   
 $x = 2$



No real solutions

Solve each equation.

7.  $m^2 - 36 = 0$

$$m^2 = 36$$

$$m = \pm 6$$

8.  $y^2 - 225 = 0$

$$y^2 = 225$$

$$y = \pm 15$$

9.  $4d^2 + 16 = 16$

$$\begin{matrix} -16 & -16 \\ 4d^2 & = 0 \\ 4 & 4 \end{matrix}$$

$$d^2 = 0$$

$$d = 0$$

10.  $\sqrt{t^2} = 144$

$$t = \pm 12$$

11.  $3x^2 + 15 = 0$

$$3x^2 = -15$$

$$\sqrt{x^2} = \sqrt{-5}$$

$$x = \pm \sqrt{-5}$$

No real solution

12.  $2x^2 - 8 = 0$

$$2x^2 = 8$$

$$x^2 = 4$$

$$x = \pm 2$$

13.  $\sqrt{(x+4)^2} = 16$

$$\begin{matrix} x+4 & = & \pm 4 \\ -4 & & -4 \end{matrix}$$

$$x = 4 - 4 = 0 = x$$

$$x = -4 - 4 = -8 = x$$

14.  $\frac{2(x-1)^2}{2} = \frac{12}{2}$

$$(x-1)^2 = 6$$

$$x-1 = \pm \sqrt{6}$$

$$x = 1 + \sqrt{6}$$

$$x = 1 - \sqrt{6}$$

15.  $\frac{-3(x-4)^2}{-3} = \frac{6}{-3}$

$$\sqrt{(x-4)^2} = \sqrt{-2}$$

$$\begin{matrix} x-4 & = & \pm \sqrt{-2} \\ +4 & & +4 \end{matrix}$$

$$x = 4 \pm \sqrt{-2} \rightarrow \text{No real solutions}$$

16.  $\frac{-2(x+2)^2}{-2} = \frac{-10}{-2}$

$$(x+2)^2 = 5$$

$$\begin{matrix} x+2 & = & \pm \sqrt{5} \\ -2 & & -2 \end{matrix}$$

$$x = -2 + \sqrt{5}$$

$$x = -2 - \sqrt{5}$$

17.  $(x+7)^2 = 0$

$$x+7 = 0$$

$$x = -7$$

18.  $\frac{-3(x+4)^2 + 3}{-3} = \frac{0}{-3}$

$$\frac{-3(x+4)^2}{-3} = \frac{-3}{-3}$$

$$\sqrt{(x+4)^2} = \sqrt{1}$$

$$\begin{matrix} x+4 & = & \pm 1 \\ -4 & & -4 \end{matrix}$$

$$x = 1 - 4 = -3 = x$$

$$x = -1 - 4 = -5 = x$$

## Test Corrections...

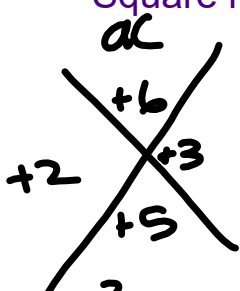
- before school
- after school
- FLEX
- 1/2 credit (on separate paper with ALL work shown)

Which method should you use? Solve

Square root

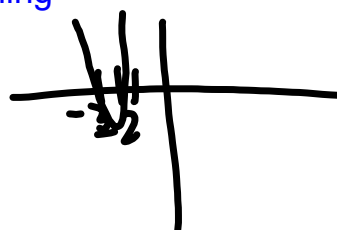
Factoring

Graphing



$$x^2 + 5x + 6 = 0$$

$\begin{matrix} a & & b & & c \\ & & \wedge & & \\ & & +2x + 3x & & \end{matrix}$



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

$$(\quad)(\quad) = 0$$

$$(x+2)(x+3) = 0$$

$$x + \cancel{2} = 0$$

$\begin{matrix} -2 & -2 \end{matrix}$

$$x = -2$$

$$x + \cancel{3} = 0$$

$\begin{matrix} -3 & -3 \end{matrix}$

$$x = -3$$



Which method should you use? Solve

Square root

Factoring

Graphing

$$3x^2 + 9x^0 = 0$$

$$3x(x+3) = 0$$

$$\begin{array}{l} \cancel{3}x = 0 \\ \cancel{3} \quad \underline{3} \\ x = 0 \end{array}$$

$$\begin{array}{l} x + \cancel{3} = 0 \\ \quad \quad \underline{-3} \quad \underline{-3} \\ x = -3 \end{array}$$

Which method should you use? Solve

Square root

Factoring

Graphing

$$4x^2 = 16$$

$$4x^2 - 16 = 0$$

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

$$2x+4 = 0$$

$$4x^2 = \frac{16}{4}$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

$$\sqrt{4x^2} = \sqrt{16}$$

$$\frac{2}{2}x = \pm \frac{4}{2}$$

Which method should you use? Solve

Square root

Factoring

Graphing

$$\sqrt{(x-4)^2} = \sqrt{8}$$

$$x - 4 = \pm 2\sqrt{2}$$

$$\begin{array}{ccc} +4 & & +4 \end{array}$$

$$x = 4 \pm 2\sqrt{2}$$

$$\sqrt{8}$$

$$\swarrow \searrow$$

$$2 \quad \cancel{4}$$

$$\quad \swarrow \searrow$$

$$\quad \quad \circledast \quad \circledast$$

$$\quad \quad 2 \quad 2$$

Which method should you use? Solve

Square root

Factoring

Graphing

$$3x^2 + 4x - 20 = 15x$$

$-15x$ 
 $-15x$

$$\boxed{3x^2 - 11x - 20} = 0$$

$$(3x^2 - 15x) + (4x - 20) = 0$$

$$3x(x - 5) + 4(x - 5) = 0$$

$$(x - 5)(3x + 4) = 0$$

$$x - 5 = 0$$

$$+5 \quad +5$$

$$x = 5$$

$$3x + 4 = 0$$

$$-4 \quad -4$$

$$\frac{3x}{3} = \frac{-4}{3}$$

$$x = -\frac{4}{3}$$

ac

$$\begin{array}{cc} & -60 \\ -15 & \times & +4 \\ & -11 & \end{array}$$

## 3.5A Blue ws due Thursday

- put "3.5A blue ws" on hw tracker

Questions on it??

Name: \_\_\_\_\_ Hour: \_\_\_\_\_

Sec. 3.5A

(Solving by Factoring or Square Root Method)

Solve each quadratic equation and write your answer in exact form.

1.  $x^2 - 5x - 14 = 0$

2.  $5v^2 - 9v - 18 = 0$

3.  $x^2 + 6 = 38$

4.  $k^2 - 7k = 0$

5.  $(x-6)^2 = 9$

6.  $m^2 = -3m - 2$

7.  $9x^2 = 4$

8.  $8x^2 - 6 = 47x$

9.  $n^2 - n = 6$

10.  $2(x+1)^2 = 16$

11.  $2n^2 = 4n$

12.  $6b^2 = 294$

13.  $x^2 - x = 42$

14.  $9 + 10n = -n - 2n^2 - 3$

15.  $n^2 + 3 = 67$

16.  $40n^2 - 32 = 8n$

17.  $x^2 - 28 = 3x$

18.  $16x^2 = 49$

19.  $v^2 - 7v = -12$

20.  $r^2 = 36r$

21.  $3m^2 - 9m - 19 = 5 - 8m$

22.  $x^2 = -11x - 30$

23.  $9x^2 = 1$

24.  $-3(x+4)^2 = -15$

