

Today's Business

1. Please hand in your extracting the roots worksheet
2. Please hand it your Graphing Quadratics with xy Trees
3. Quiz-This ~~Week~~ *tomorrow*
  - a. Graphing quadratics by hand
  - b. Simplifying radicals
  - c. Solving quadratics by extracting the root

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Problems on last slide

Study for the Quiz

Date: 2/16<http://www.mathvizza.com>Bell WorkDirections: Please simplify the following.

1.  $-3\sqrt{48}$

2.  $\frac{3}{2\sqrt{7}}$

Directions: Please solve for x in the following equations. Give exact answers.

1.  $3x^2 - 9 = 12$

2.  $(2x + 3)^2 = 12$

$$\sqrt{(2x+3)^2} = \pm 12$$

$$2x+3 = \pm 2\sqrt{3}$$

$\begin{array}{cc} -3 & -3 \end{array}$

$$\begin{array}{c} \sqrt{12} \\ \diagdown \quad \diagup \\ 4 \quad 3 \\ \diagup \quad \diagdown \\ \boxed{2 \quad 2} \end{array}$$

$$\cancel{2}x = \frac{-3 \pm 2\sqrt{3}}{2}$$

### Objectives

1. The students will comprehend the axis of symmetry for a quadratic function.
2. The students will comprehend the zero/root of a function.

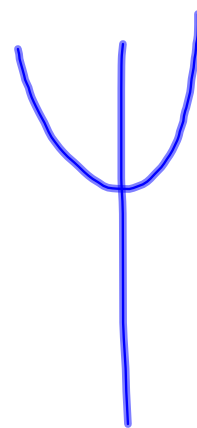
Vocabulary

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

Axis of Symmetry - a vertical line of the form  $x = -\frac{b}{2a}$  such that it intersects the vertex

Zero/Root -  $x$ -value that makes  $f(x) = 0$

y



## Zero or Not?

Directions: Please determine if the following values of  $x$  are zeroes of the given function.

1.  $x=1, -4, 6$        $f(x)=x^2-2x-24$

no

$$f(1) = 1^2 - 2(1) - 24$$

$$= 1 - 2 - 24$$

$$= -25$$

$$f(-4) = (-4)^2 - 2(-4) - 24$$

$$= 16 + 8 - 24$$

$$= 24 - 24 = 0$$

2.  $x=-3, 3, 0, 9$        $f(x)=x^2-9$

Is  $x = -b/a$  a root to the function  $f(x) = ax^2 - bx$ ?

What does a zero mean graphically?

roots\_of\_quadratics.gsp

## Homework

Directions: For the following functions:

1. Compute axis of symmetry with the formula  $x=-b/2a$
  2. Evaluate 5 points for the function.
  3. Note x values that are zeros.
  4. Graph the function.
  5. Graph the axis of symmetry
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1.  $f(x)=x^2-4x+4$

2.  $g(x)=x^2+4x$

3.  $m(x)=x^2-1$

4.  $h(x)=-x^2-8x-17$

## Attachments

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