

Questions on 2.1 HW? Quiz soon...

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Highland HS

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Topic: Finding Key Features in the graph of a quadratic equation

Make a point on the vertex and draw a dotted line for the axis of symmetry. Label the coordinates of the vertex and state whether it's a maximum or a minimum. Write the equation for the axis of symmetry.

1.

2.

3.

4.

5.

6.

7. What connection exists between the coordinates of the vertex and the equation of the axis of symmetry?

8. Look back at #6. Try to find a way to find the exact value of the coordinates of the vertex. Test your method with each vertex in 1 - 5. Explain your conjecture.


9. How many x-intercepts can a parabola have?

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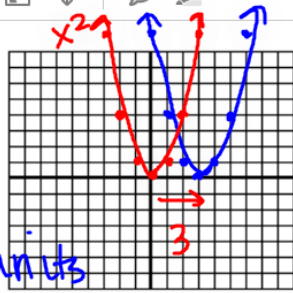
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18 a)  $g(x) = (x-3)^2$

x	0	1	2	3	4	5	6
g(x)	9	4	1	0	1	4	9

b) 

c) In what way did the graph move? *from  $x^2$  to the right 3 units*

d) What part of the equation indicates this move? *the -3*

**Go**


Topic: Finding square roots

Simplify the following expressions

19.  $\sqrt{49a^2b^6}$       20.  $\sqrt{(x+13)^2}$       21.  $\sqrt{(x-16)^2}$

22.  $\sqrt{(36x+25)^2}$       23.  $\sqrt{(11x-7)^2}$       24.  $\sqrt{9m^2(2p^3-q)^2}$

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Topic: Finding square roots  $\sqrt{a^2} = a$

Simplify the following expressions

19.  $\sqrt{49a^2b^6} = \sqrt{49} \cdot \sqrt{a^2} \cdot \sqrt{b^6} = 7ab^3$

20.  $\sqrt{(x+13)^2}$

21.  $\sqrt{(x-16)^2} = x-16$  or  $\pm(x-16)$

22.  $\sqrt{(36x+25)^2}$

23.  $\sqrt{(11x-7)^2}$

24.  $\sqrt{9m^2(2p^3-q)^2}$


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$\sqrt{b^6} = \sqrt{b^2 \cdot b^2 \cdot b^2} = b \cdot b \cdot b$

$\sqrt{b^6} = \sqrt{b \cdot b \cdot b \cdot b \cdot b \cdot b}$

10 SECONDARY MATH II // MODULE 2  
STRUCTURES OF EXPRESSIONS

2.2 Transformers: More Than Meets the y's



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24)  $\sqrt{9m^2(2p^3-q)^2} = \sqrt{9} \cdot \sqrt{m^2} \cdot \sqrt{(2p^3-q)^2}$

$= 3m(2p^3-q)$

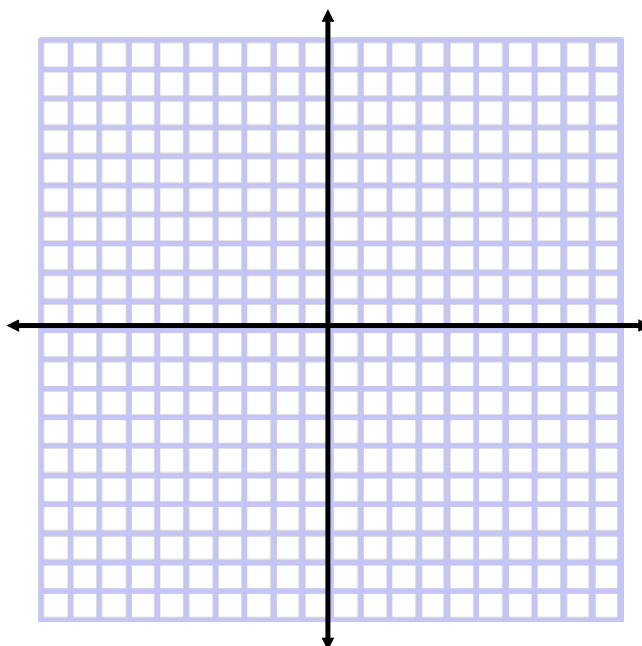
$\sqrt{(2p^3-q)^2} = \sqrt{(2p^3-q)(2p^3-q)} = 2p^3-q$

## Module 2 Quiz #1: Graphing Quadratics

Fill out the following table and graph the quadratic function. Label your points that are in the table!

x	y
-2	
-1	
0	
1	
2	

$$f(x) = (x+1)^2$$

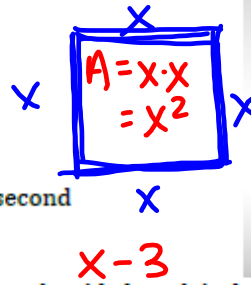


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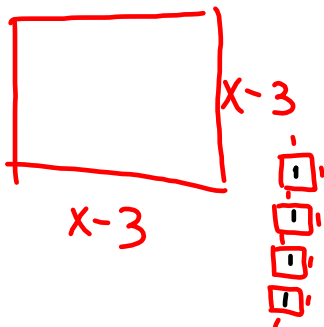
## 2.2 Transformers: More Than Meets the y's

*A Solidify Understanding Task*

Write the equation for each problem below. Use a second representation to check your equation.



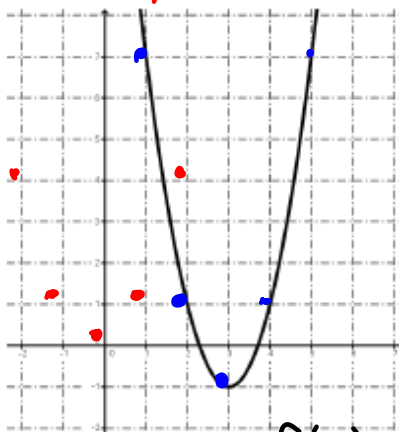
1. The area of a square with side length  $x$ , where the side length is decreased by 3, the area is multiplied by 2 and then 4 square units are added to the area.



$$A = 2(x-3)^2 + 4$$

2.

$x^2$	
$x$	$y$
-2	4
-1	1
0	0
1	1
2	4



$x$	$y$
1	7
2	1
3	-1
4	1
5	7

$$f(x) = a(x+h)^2 + k$$

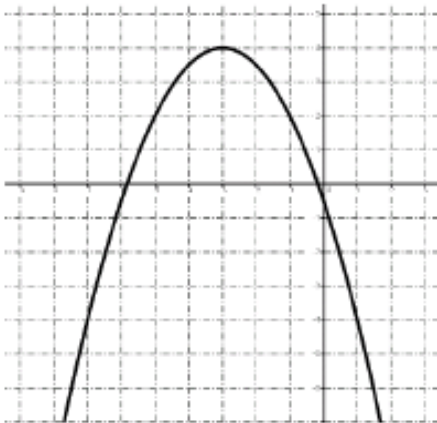
$\begin{matrix} \rightarrow 3 & \downarrow 1 \end{matrix}$

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

3.

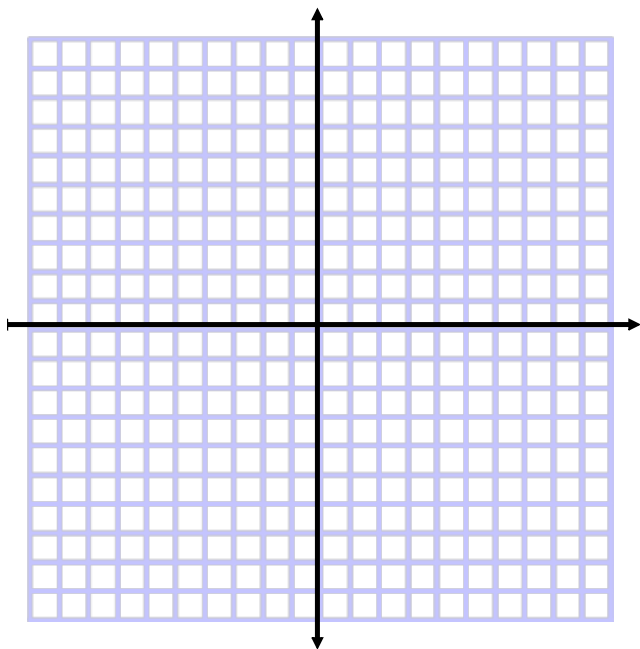
$x$	$f(x)$
-4	7
-3	2
-2	-1
-1	-2
0	-1
1	2
2	7
3	14
4	23

4.

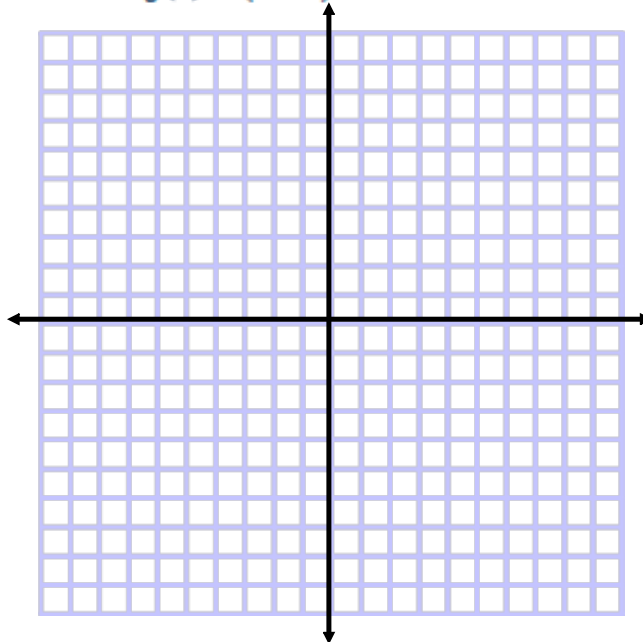


Graph each equation without using technology. Be sure to have the exact vertex and at least two correct points on either side of the line of symmetry.

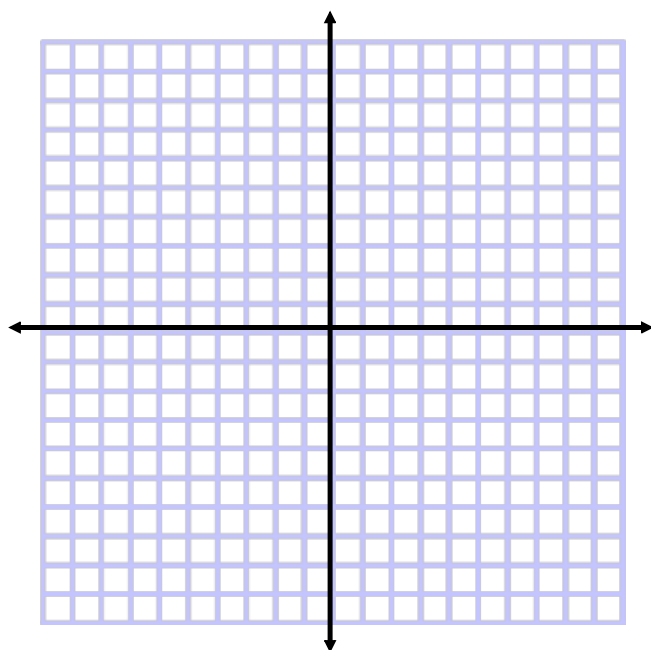
5.  $f(x) = -x^2 + 3$



6.  $g(x) = (x + 2)^2 - 5$



7.  $h(x) = 3(x - 1)^2 + 2$





8. Given:  $f(x) = a(x - h)^2 + k$
- What point is the vertex of the parabola?
  - What is the equation of the line of symmetry?
  - How can you tell if the parabola opens up or down?
  - How do you identify the dilation?
9. Does it matter in which order the transformations are done? Explain why or why not.

# Homework

Finish 2.2 "Ready, Set, Go"