

READY, SET, GO!

Name _____

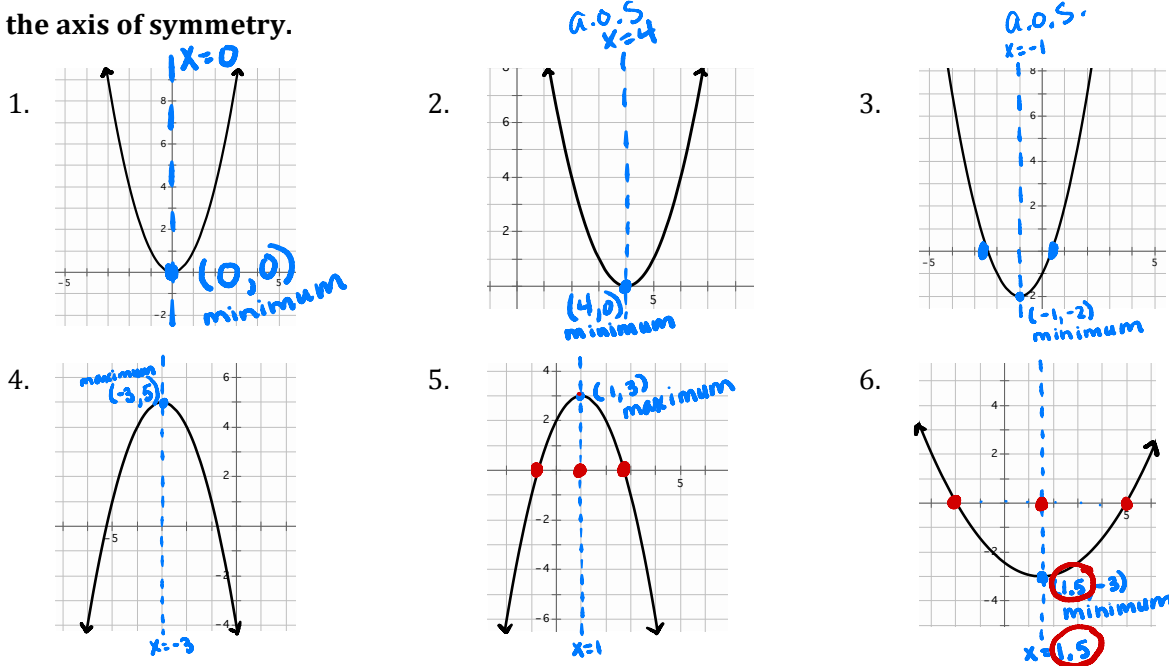
Period _____

Date _____

READY

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.

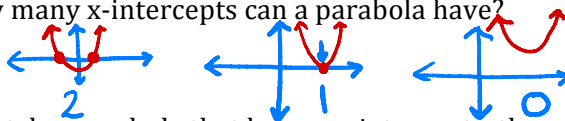


7. What connection exists between the coordinates of the vertex and the equation of the axis of symmetry?
 Vertex (h, k) a.o.s. $x=h$
 The x-value in the coordinate of the vertex is in the equation of the axis of symmetry.

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.

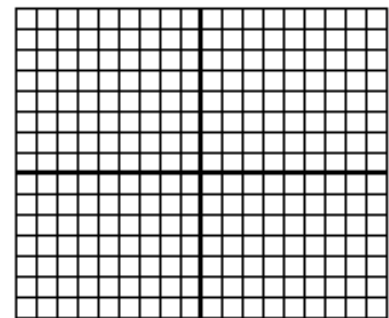
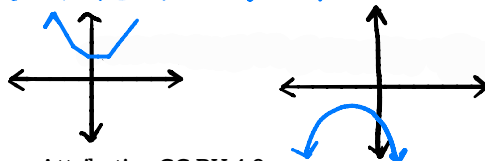
The x-value of of the vertex is the average of the x-intercepts.

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



10. Sketch a parabola that has no x-intercepts, then explain what has to happen for a parabola to have no x-intercepts.

The parabola needs to be entirely above or below the x-axis.

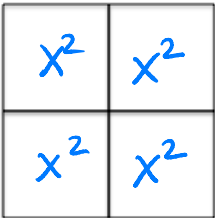
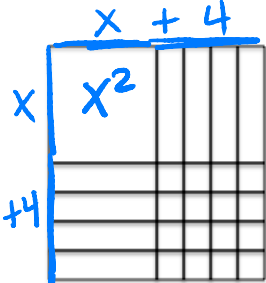
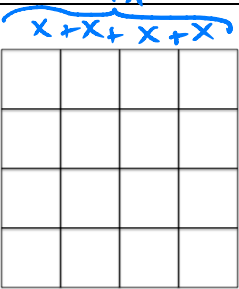
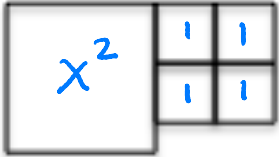


SET

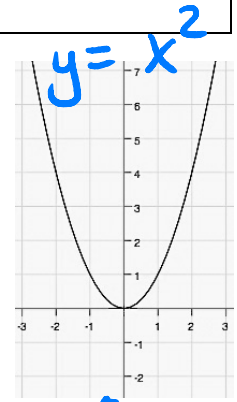
Topic: Transformations on quadratics

Matching: Choose the area model that is the best match for the equation.

- d 11. $x^2 + 4$ b 12. $(x + 4)^2$ c 13. $(4x)^2$ a 14. $4x^2$

<p>a.</p>  <p># 14) $4x^2$</p>	<p>b.</p>  <p># 12) $(x+4)^2$</p>
<p>c.</p>  <p># 13) $(4x)^2$</p>	<p>d.</p>  <p># 11) $x^2 + 4$</p>

A table of values and the graph for $f(x) = x^2$ is given. Compare the values in the table for $g(x)$ to those for $f(x)$. Identify what stays the same and what changes. a) Use this information to write the vertex form of the equation of $g(x)$. b) Graph $g(x)$. c) Describe how the graph changed from the graph of $f(x)$. Use words such as right, left, up, and down. d) Answer the question.



Parent Function

x	-3	-2	-1	0	1	2	3
$f(x) = x^2$	9	4	1	0	1	4	9

15 a) $g(x) = x^2 - 7$

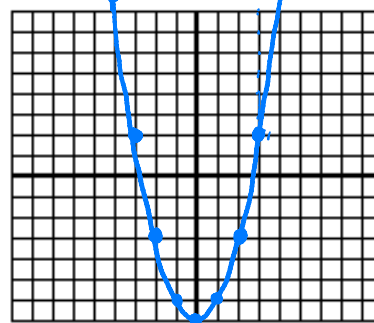
x	-3	-2	-1	0	1	2	3
x^2	9	4	1	0	1	4	9
$g(x)$	2	-3	-6	-7	-6	-3	2

c) In what way did the graph move? **Down 7**

d) What part of the equation indicates this move?

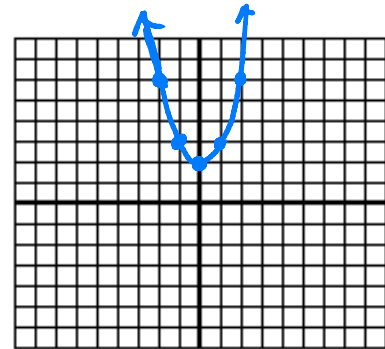
The -7 in the equation

b)



16 a) $g(x) = x^2 + 2$ b)

x	-3	-2	-1	0	1	2	3
g(x)	11	6	3	2	3	6	11

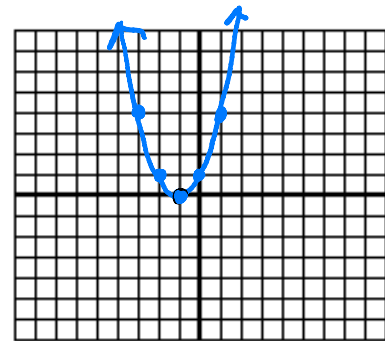


- c) In what way did the graph move? **Up 2**
d) What part of the equation indicates this move?

The plus 2 in the equation.

17 a) $g(x) = (x+1)^2$ $h = -1$ $y = a(x-h)^2 + K$ b)

x	-4	-3	-2	-1	0	1	2
g(x)	9	4	1	0	1	4	9

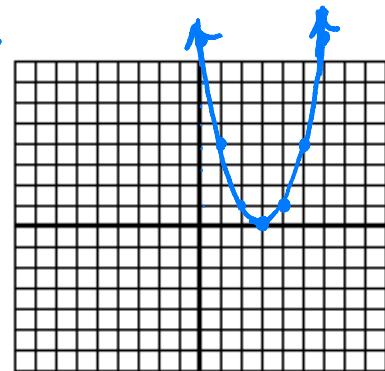


- c) In what way did the graph move? **Left + 1**
d) What part of the equation indicates this move?

The +1 in the parentheses.

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

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



- c) In what way did the graph move? **Right 3**
d) What part of the equation indicates this move?

The -3 in the equation.

GO

Topic: Finding Square Roots
Simplify the following expressions

19. $\sqrt{49a^2b^6}$
 $7|a||b^3|$

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

21. $\sqrt{(x-16)^2}$
 $|x-16|$

22. $\sqrt{(36x+25)^2}$
 $|6x+5|$

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

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

* absolute values mean answers must be positive.

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