Quadratic Transformation Worksheet Name_____

1. Write the vertex form of a quadratic equation.

2. What does changing the "a" variable do to the graph of a quadratic?

3. Being specific, name 3 ways that a parabola changes with different types of "a" values.

4. What does changing the "h" variable do to the graph of a quadratic?

5. If "h" is positive how does the parabola move? If negative?

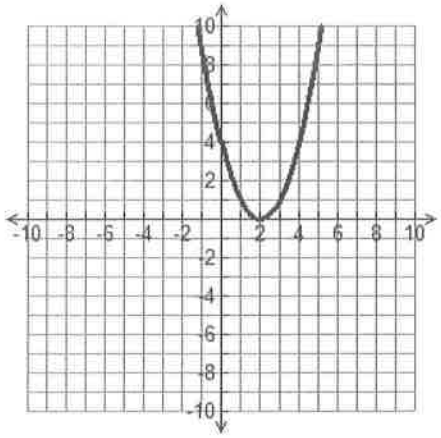
6. What does changing the "k" variable do to the graph of a quadratic?

7. If "k" is positive how does the parabola move? If negative?

8. What conclusion can you make about the variables of h and k together?

Write the quadratic equation, in vertex form for each graph.

1.



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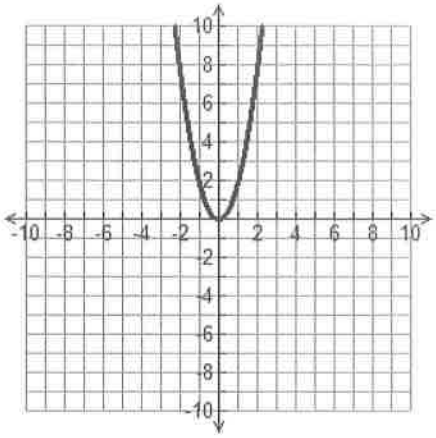

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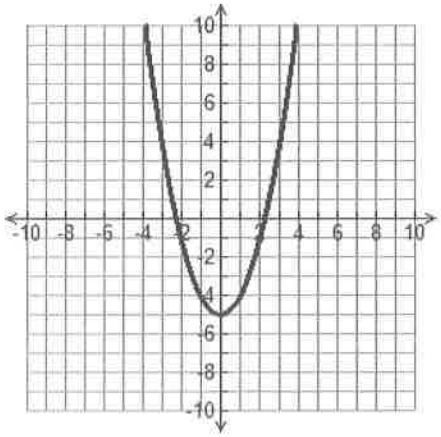

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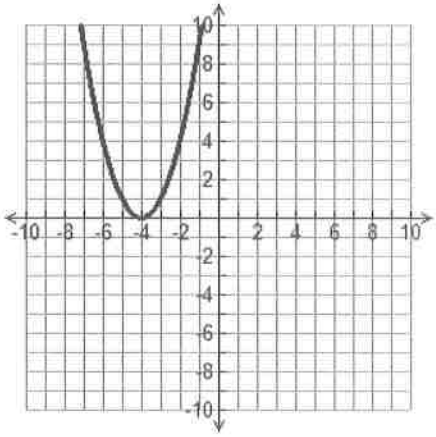

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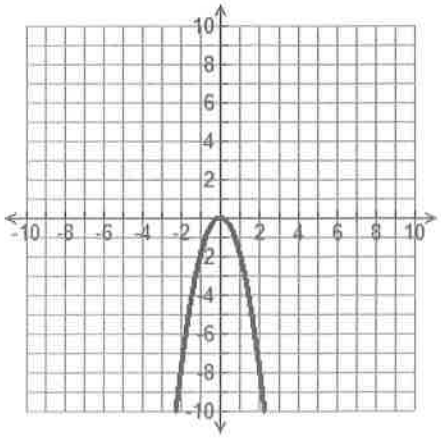

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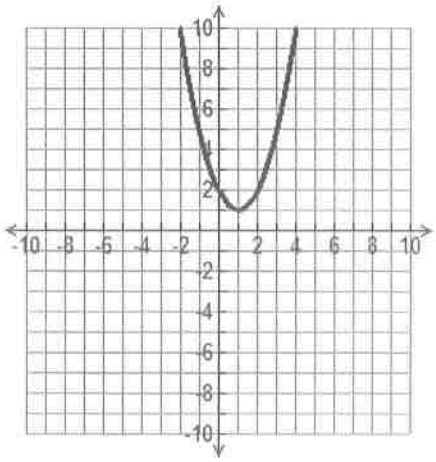

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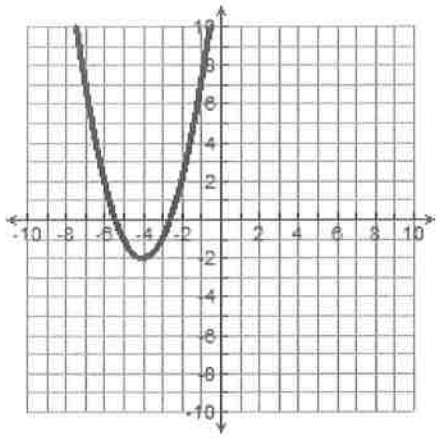

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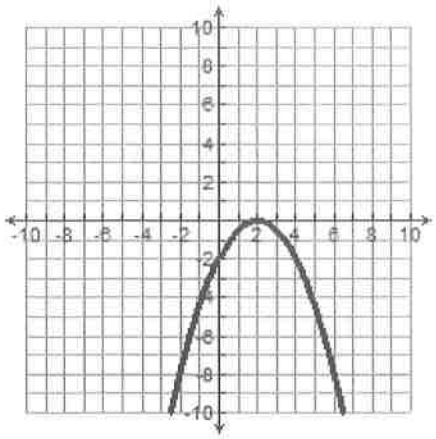

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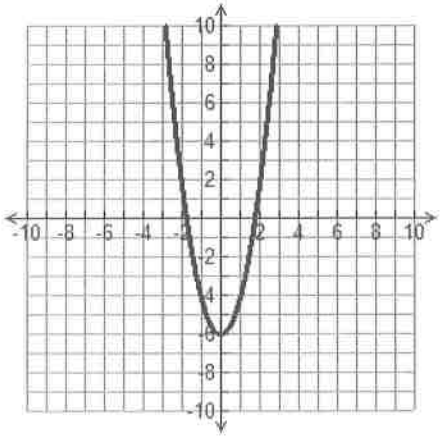

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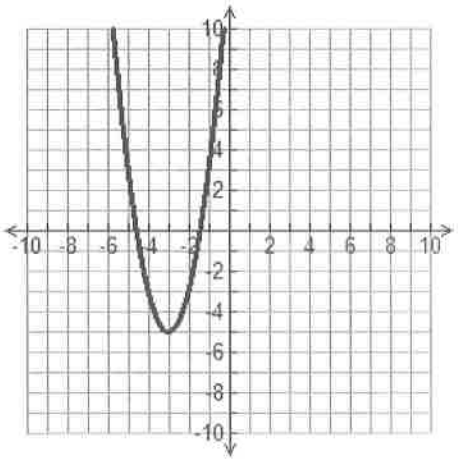
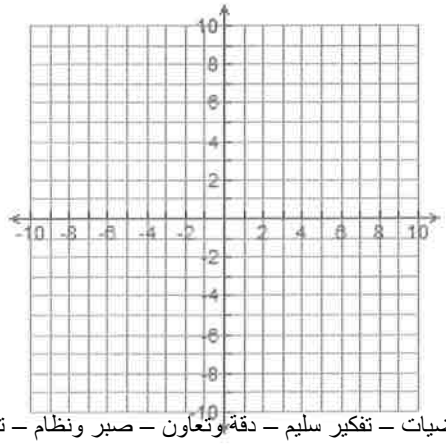
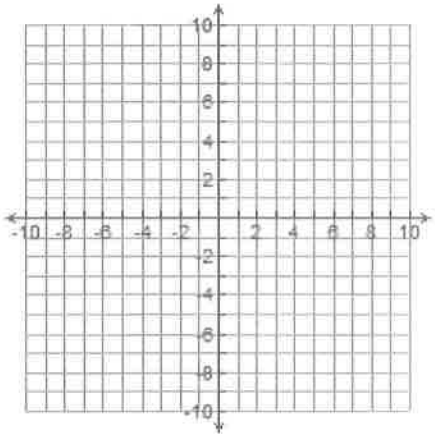


Graph the quadratic equation on the provided grid.

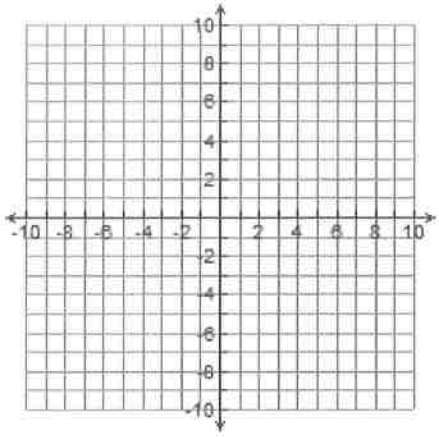
11. $f(x) = (x-0)^2 + 3$



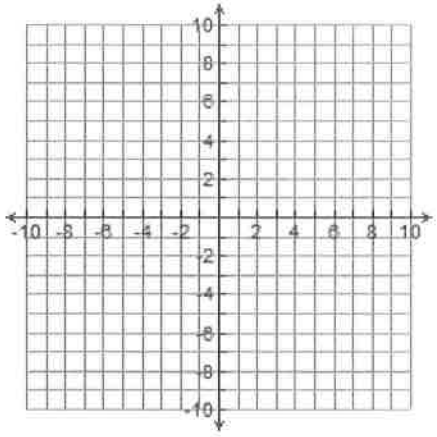
12. $f(x) = (x+4)^2 + 0$



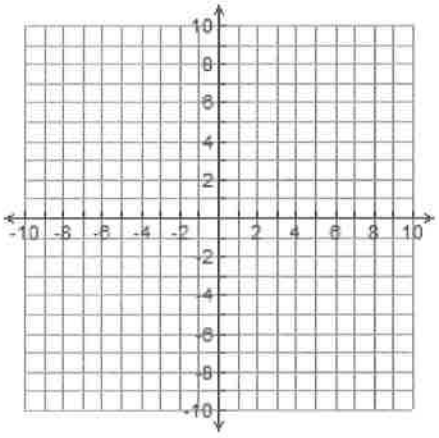
13. $f(x) = -2(x-0)^2 + 0$



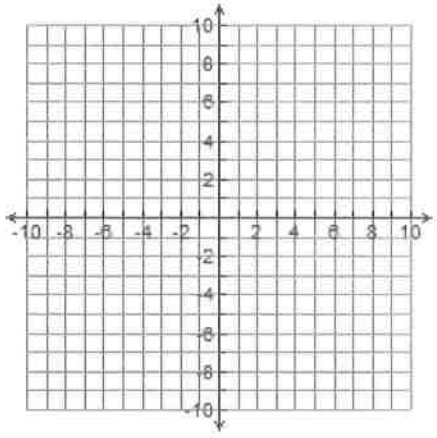
14. $f(x) = (x-3)^2 + 4$



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



16. $f(x) = \frac{1}{2}(x+2)^2 + 3$



Quadratic Transformation Worksheet Name KEY

1. Write the vertex form of a quadratic equation.

$y = a(x-h)^2 + k$

2. What does changing the "a" variable do to the graph of a quadratic?

flipped -a make it fatter (divide) or skinnier (multiply)

3. Being specific, name 3 ways that a parabola changes with different types of "a" values.

example $y = (x+7)^2 + 2$

skinnier $y = 2(x+7)^2 + 2$

fatter $y = \frac{1}{2}(x+7)^2 + 2$

flipped $y = -(x+7)^2 + 2$

4. What does changing the "h" variable do to the graph of a quadratic?

move left or right

5. If "h" is positive how does the parabola move? If negative?

$(x+7)^2 + 2$ left 7

$(x-7)^2 + 2$ right 7

6. What does changing the "k" variable do to the graph of a quadratic?

move it up and down

7. If "k" is positive how does the parabola move? If negative?

$(x+7)^2 - 2$ down

$(x+7) + 2$ up

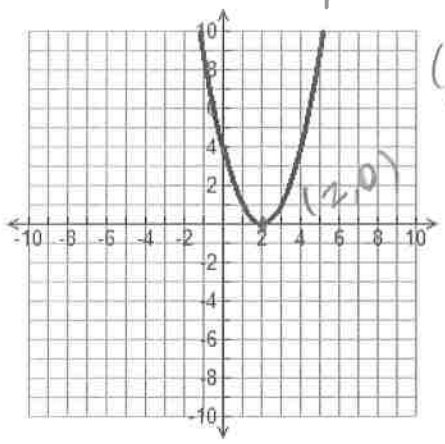
8. What conclusion can you make about the variables of h and k together?

moves the vertex of the graph left or right and up or down

x	x^2 (y)	This graph $1.5x^2$
1	1	1.5
2	4	7
3		

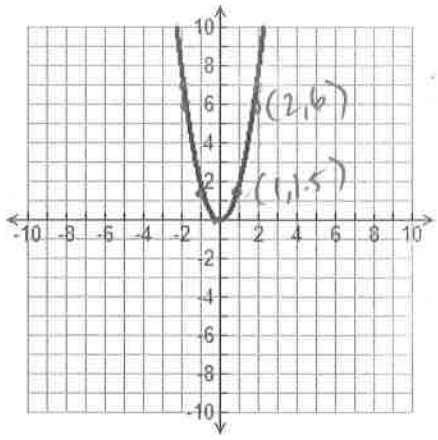
Write the quadratic equation, in vertex form for each graph.

1. $y=(x-2)^2$

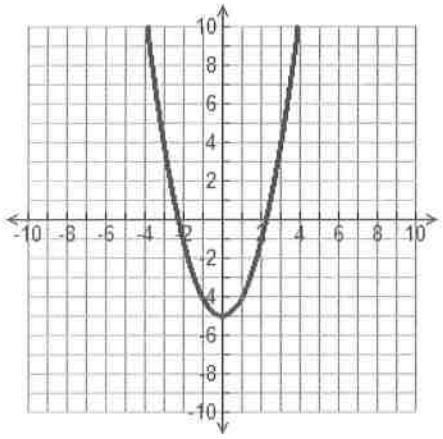


(no stretch or shrink so "a")

2. $y=1.5x^2$

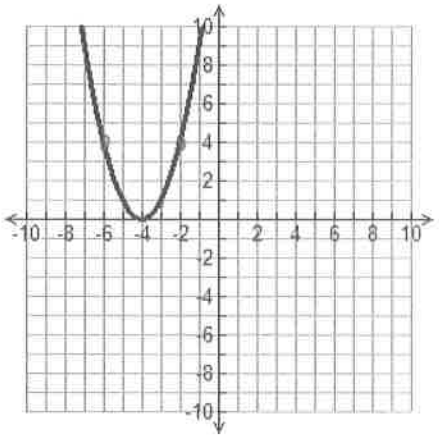


3. $y=x^2-5$

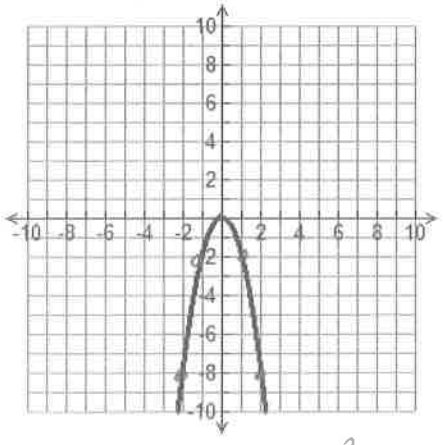


no stretch or shrink

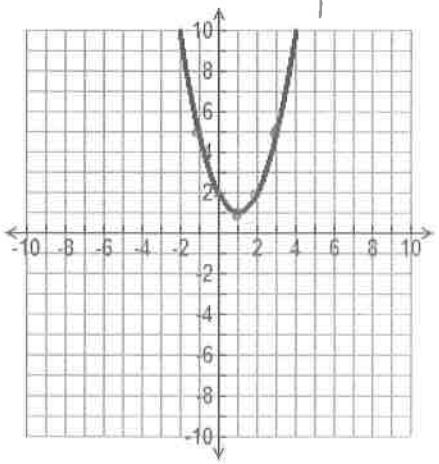
4. $y=(x+4)^2$



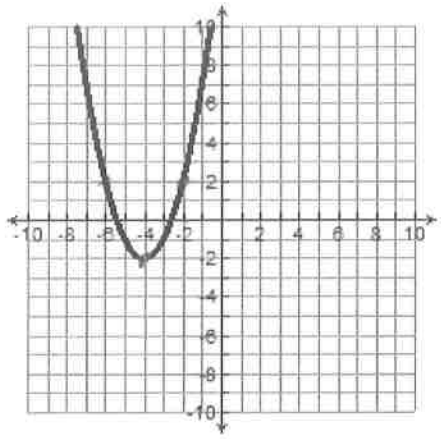
5. $y=-2x^2$



6. $y=(x-1)^2+1$



7. $y=(x+4)^2-2$



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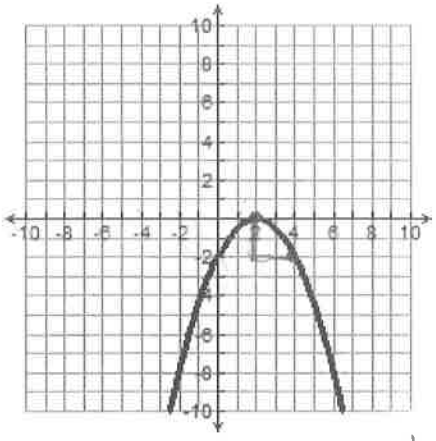
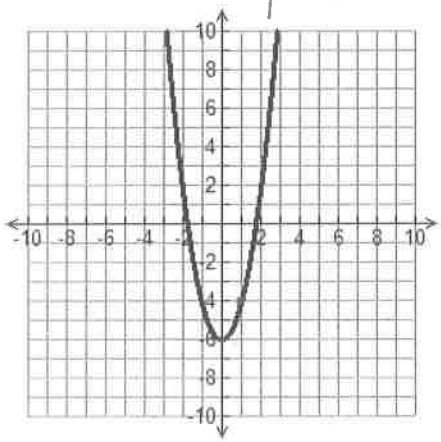


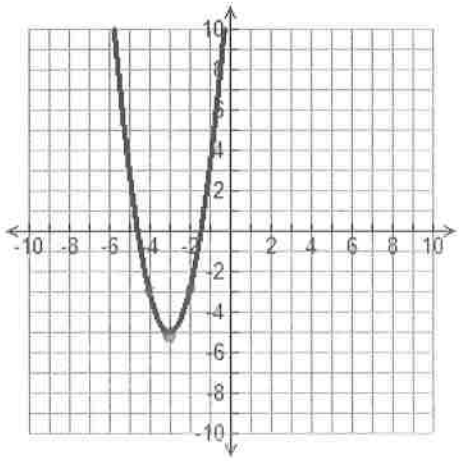
$y=-\frac{1}{2}(x-2)^2$

-1	-4
0	-2
2	0
4	-2
1	$-\frac{1}{2}$

9. $y=2x^2-6$



10.



$y=2(x+3)^2-5$

Graph the quadratic equation on the provided grid.

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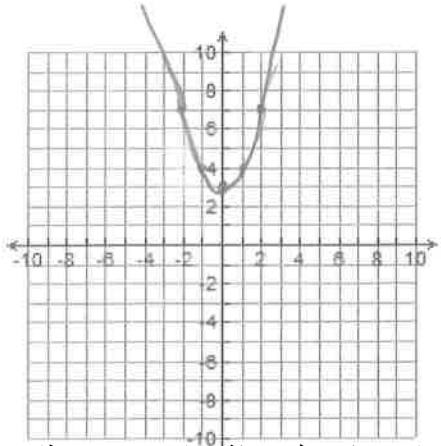
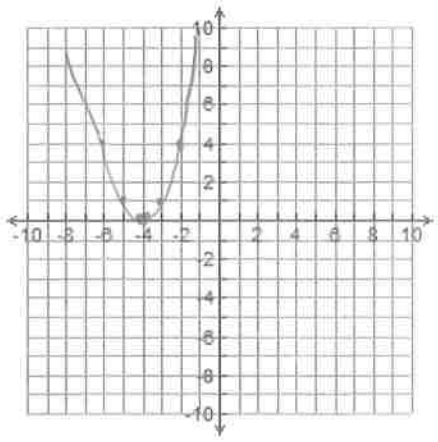


12. $f(x)=(x+4)^2+0$



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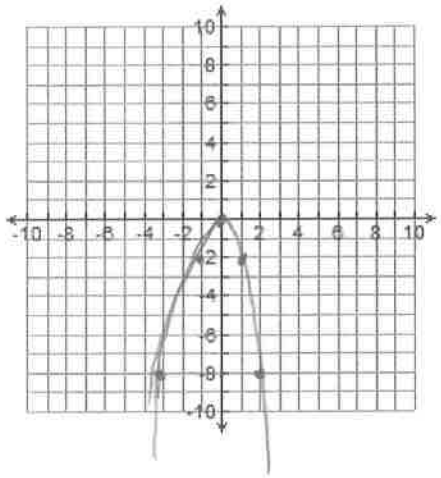
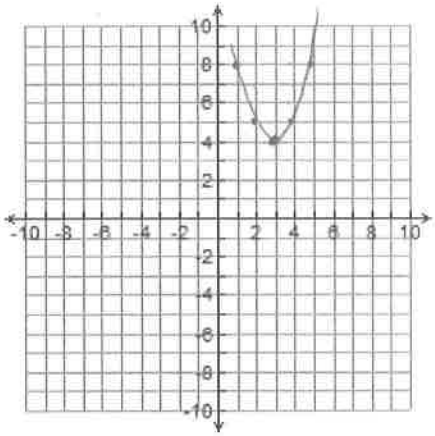
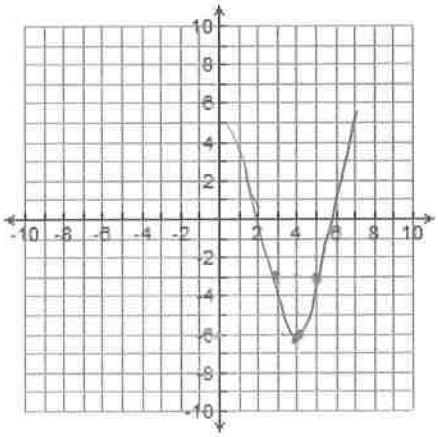


14. $f(x) = (x-3)^2 + 4$



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



16. $f(x) = \frac{1}{2}(x+2)^2 + 3$