Name_____ Date_____ Period_____

QUADRATIC TRANSFORMATIONS WORKSHEET

1. Write the generalized vertex form of a quadratic equation.

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

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 function?

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 function?

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?

Describe how the following equations transformed from $y = x^2$.

9. $y = 3x^2 - 5$

10. $y = \frac{1}{3}(x+1)^2$

11. $y = -2(x-3)^2 + 4$

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

Write the quadratic equations under the specific transformations from $y = x^2$.

13. translated 1 unit to the right and 5 units down

14. vertical stretch of 2, reflect across the x-axis and translated 3 units up

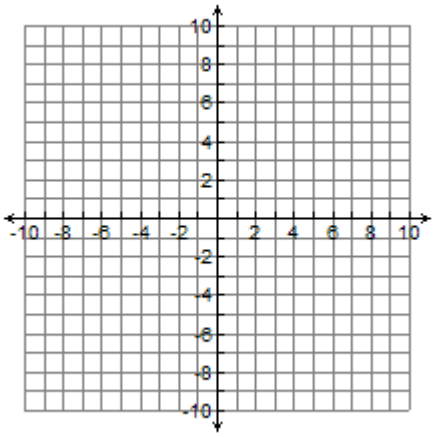
15. vertical compression of 1/3, translated 7 units to the left

For problems 16 – 19, give the name of the parent function and describe the transformation represented. Then, graph the quadratic equation on the provided grid.

16. $f(x) = -2(x-1)^2$

Parent:_____

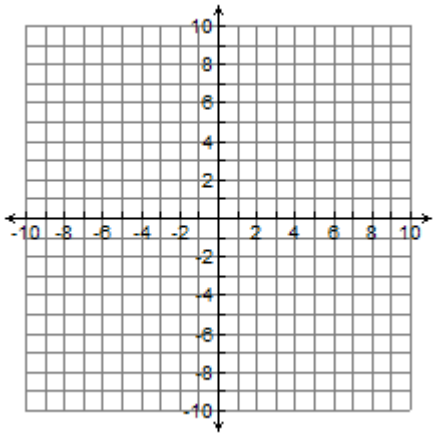
Transformations:



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

Parent:_____

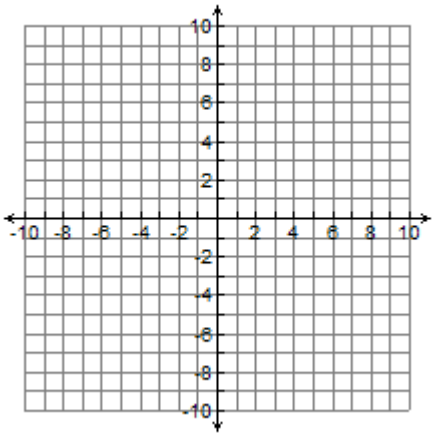
Transformations:



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

Parent:_____

Transformations:



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

Parent:_____

Transformations: