

**Core Algebra 2**  
**Worksheet 2.1-2.2B**

**Describe the transformation represented by the equation  $f(x) = a(x + h)^2 + k$ .**

1.  $f(x) = -(x + 2)^2 - 9$

2.  $f(x) = 3(x - 4)^2 + 8$

3.  $f(x) = -\frac{1}{4}(x - 3)^2 + 8$

4.  $f(x) = -2(x + 6)^2 - 10$

**Write a function  $g$  which describes the transformation of  $f$ .**

5.  $f(x) = x^2$ ; right 4, reflection

6.  $f(x) = (x - 1)^2$ ; right 3, up 5

7.  $f(x) = (x + 3)^2$ ; down 4, v.stretch by 2

8.  $f(x) = 2(x + 3)^2$ ; up 6, left 1, v.shrink by  $\frac{1}{2}$

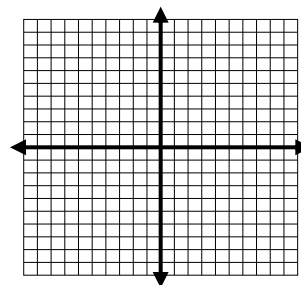
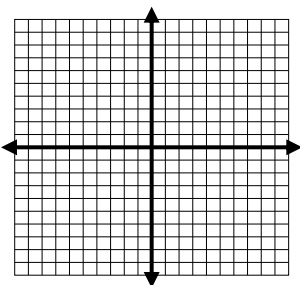
9.  $f(x) = 4(x + 3)^2 + 5$ ; down 3, right 2, v.stretch by 2

10.  $f(x) = -3(x + 3)^2 - 2$ ; up 4, left 3, reflection

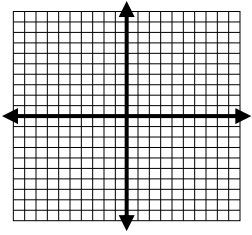
**Find the vertex, axis of symmetry, and then graph.**

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

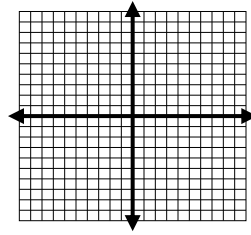
12.  $f(x) = 2(x - 1)^2 - 3$



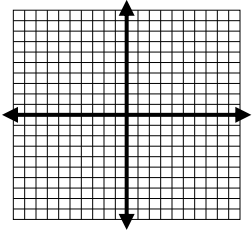
13.  $f(x) = -(x - 1)^2 + 7$



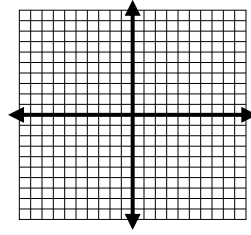
14.  $f(x) = 3(x + 2)^2 - 9$



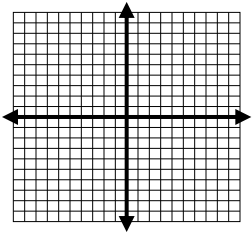
15.  $f(x) = x^2 + 4x + 2$



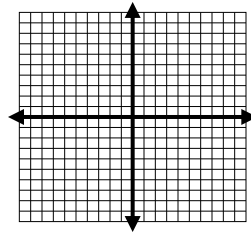
16.  $f(x) = x^2 - 2x + 1$



17.  $f(x) = 2x^2 + 8x + 5$

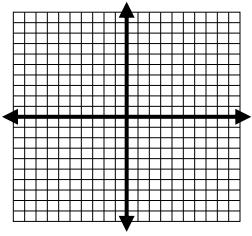


18.  $f(x) = 2x^2 - 12x - 3$

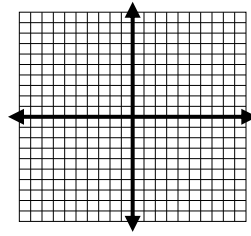


**Graph.** Find the x-intercepts, axis of symmetry, vertex, and the minimum or maximum value.

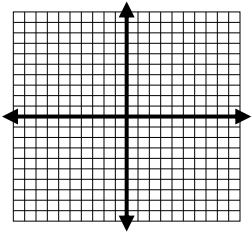
19.  $f(x) = -(x - 4)(x + 2)$



20.  $f(x) = 3(x + 1)(x + 5)$



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



22.  $f(x) = (x - 3)(x - 5)$

