Vertex Form Worksheet B

Name: _____Hr:____

Axis of symmetry: x= $h = \frac{-b}{2a}$, $k = f(h)$ Vertex: (h, k) Vertex form: $y = a(x-h)^2 + k$

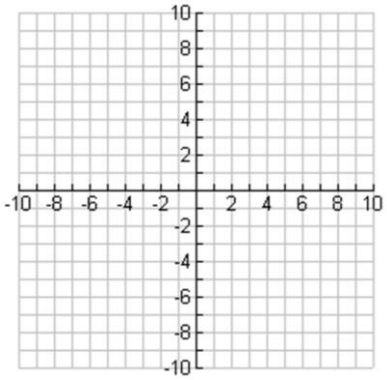
Use the formula $\left(-\frac{b}{2a}, \_\_\_\right)$ to find the vertex and then write the equation in vertex form.

1. $y = x^2 - 6x + 1$
2. $y = -4x^2 + 16x - 11$
3. $y = x^2 - 8x + 18$

4. $f(x) = -x^2 + 2x + 5$
5. $y = 2x^2 - x + 1$
6. $f(x) = x^2 - 8x + 16$

Find the following given the equations: (a) write the equation in vertex form, (b) identify the vertex, (c) identify the axis of symmetry, (d) state if the vertex is a max or a min, and (e) sketch a graph.

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



a)

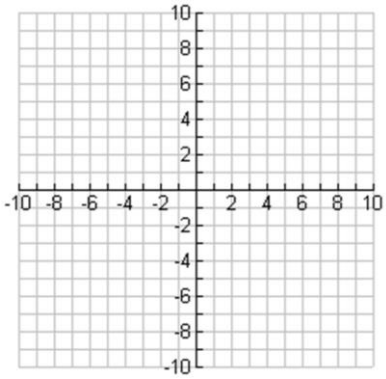
b)

c)

d)

e)

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



a)

b)

c)

d)

e)

State if the equation is in vertex form or standard form or both. Then find the vertex for the equations below.

9. $y = (x-6)^2 + 3$
10. $y = x^2 - 25$
11. $y = -2x^2 + 20x - 35$

12. $y = 5x^2 - 6$
13. $y = 4x^2 + 24x$
14. $f(x) = -3(x+2)^2 - 17$