Vertex Form using: $\boldsymbol{h = \frac{-b}{2a}}$, $\boldsymbol{k = f(h)}$ Name:_____Hr:____

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

1-6. Use the formula $\left(-\frac{b}{2a}, \text{——}\right)$ 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. $y = x^2 - 8x + 18$

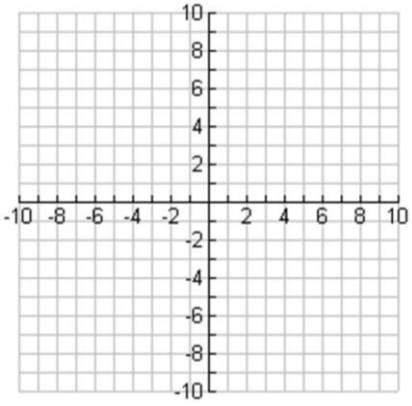
4. $f(x) = -x^2 + 2x + 5$

5. $y = 2x^2 - x + 1$

6. $f(x) = x^2 - 8x + 16$

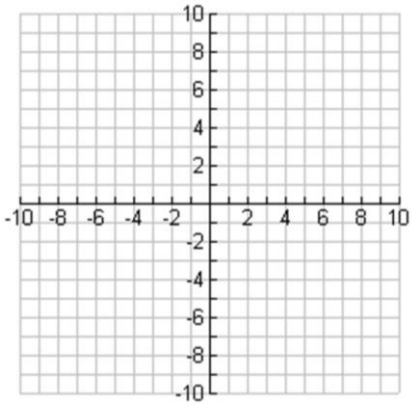
7-8. Find the following: (a) write the equation in vertex form, (b) identify vertex, (c) identify axis of symmetry, (d) state if vertex is a max or a min, (e) sketch graph, (f) x-intercepts, (g) y-intercept, (h) domain and range.

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



a) _____
b) _____
c) _____
d) _____
e) _____
f) _____
g) _____
h) _____
i) Find f(0)_____

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



a) _____
b) _____
c) _____
d) _____
e) _____
f) _____
g) _____
h) _____
i) Find f(-3)_____

9-14. State if the equation is in vertex form or standard form or both. Then find the vertex for each equation.

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