

Name _____

Period _____ Date _____

Homework 9.1.3

1. Complete the square for each of the following to write them in Vertex Form (or Graphing Form) then state the vertex for each equation.

a) $f(x) = x^2 + 16x + 71$

b) $f(x) = x^2 - 2x - 5$

Vertex: (,)

c) $f(x) = 2x^2 + 36x + 170$

Vertex: (,)

d) $f(x) = -6x^2 - 12x - 13$

Vertex: (,)

e) $f(x) = x^2 + 4x$

Vertex: (,)

f) $f(x) = (x + 5)(x + 4)$

Vertex: (,)

Vertex: (,)

2. Joe is thinking of a function $f(x)$. He has not told anyone the function but has given these hints:

$$f(10) = 101$$

$$f(2) = 5$$

$$f(-3) = 10$$

$$f(0) = 1$$

What is the function that Joe is thinking of?

3. Write the equation of a function in graphing form for each parabola described below.

Reminder that graphing form is: $f(x) = a(x - h)^2 + k$

a) A parabola with vertex $(0, -5)$ that passes through the point $(-1, 2)$.

b) A parabola with vertex $(1, 4)$ that passes through the point $(5, -4)$.

4. What is the solution to the system of equations below?

$$y = \frac{1}{2}x - 4$$

$$x - 4y = 12$$