Name _____

Period _____ Date _____

Homework 9.4.1

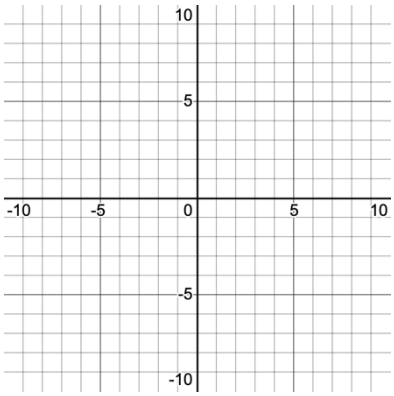
1) For each function, write an equation for the inverse function. Check each answer (think of reversed x and y values).

a. $f(x) = 2x + 3$	b. $g(x) = \frac{x-5}{4}$

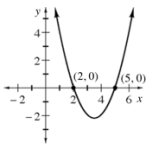
2) Each of the following questions should be "comfortable" for you now. Each question covers some area of basic understanding of quadratics.

a. Make an x → y table and then draw a graph of $y=x^2-2x-3$.

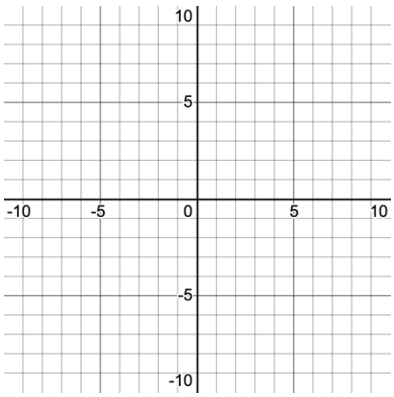
x	y



b. Write a possible equation for the given graph



c. Without making an x → y table, what are the x-intercepts of $y=x^2+8x+7$? Use them to calculate the coordinates of the vertex and then sketch a graph.



d. The height (in feet) of a rocket after x seconds is given by the equation $y=128x-16x^2$. What is the maximum height reached by the rocket and how long does it take to reach that height?

3. If $f(x)=x^2+2x+1$ and $g(x)=x-3$, write each of the following functions:

a. $s(x)=f(x)+g(x)$	b. $m(x)=f(x)-g(x)$
c. $v(x)=2f(x)$	d. $d(x)=g(x)-f(x)$

4. Determine the inverse functions below.

a. If $f(x)=2x-3$, then what does $f^{-1}(x)$ equal?

b. If $h(x)=(x-3)^2+2$, then what does $h^{-1}(x)$ equal?

c. What is the domain of $h(x)$ from part (b) if both $h(x)$ and $h^{-1}(x)$ are functions?

5. The graph of $y=f(x)$ is shown below. Using colored pencils or pens, add the following transformed functions to the graph.

a. $y = f(x) - 1$
b. $y = -f(x)$
c. $y = 2f(x)$