Day #1 Assignment - Algebra 2B

1) Find the domain and range of each graph.
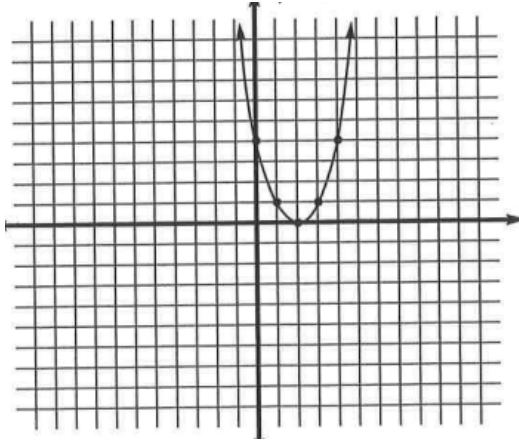

Domain

Range:

Domain

Range:
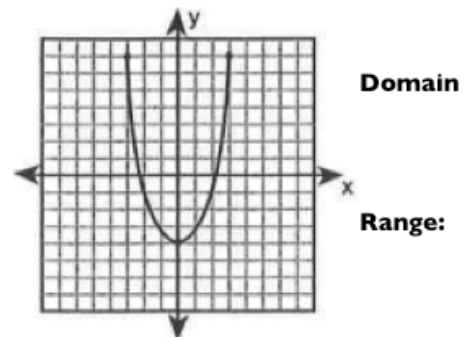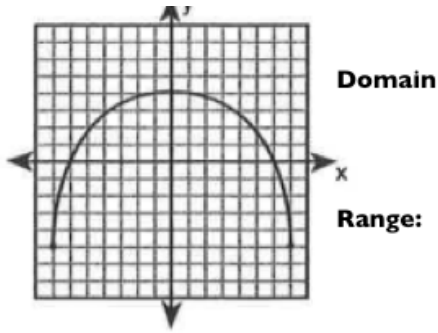
2) Graph the following *without a calculator*. Use what you remember about transformations of functions, in this case from the parent $y = x^2$. The graph of the function $y = (x - 2)^2$ is shown. Add the following two graphs, again without using a calculator.

$$f(x) = 2(x + 5)^2$$

and

$$f(x) = -(x - 7)^2 - 1$$

3) The general equation for a circle is $(x - h)^2 + (y - k)^2 = r^2$ with center (h,k). Using the grid from question #2, Graph the circle given by the equation is $(x + 3)^2 + (y - 1)^2 = 16$

4) Factor the following quadratic expression into two binomial factors. Use whatever method you used in Aglebra 2A.

$$x^2 - 16x - 36$$

5) Now factor the following three quadratic expressions, this time using a quick shortcut. (if possible)

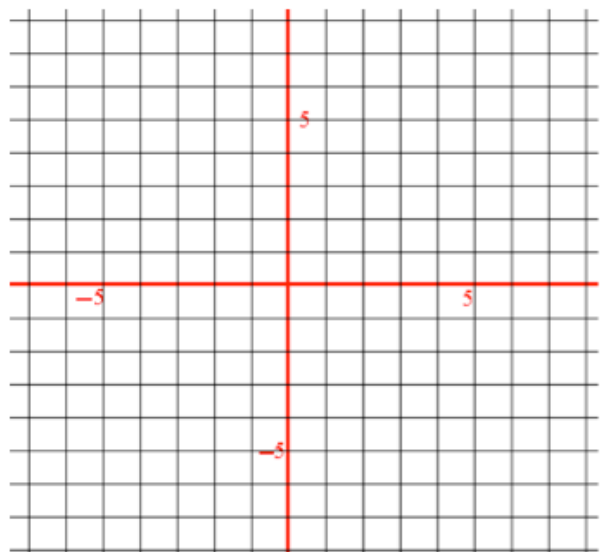$$x^2 - 144 = \qquad 8x^2 - 2 = \qquad n^2 + 25 =$$

7) Find the inverse of the following functions and use good notation for your answers:

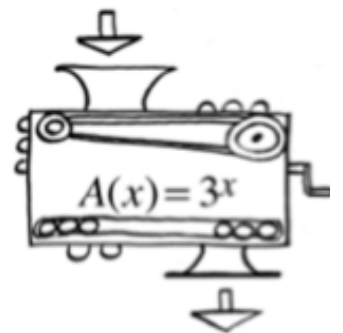$$y = \frac{1}{5}(x + 2)$$ $$f(x) = \frac{3x-5}{2}$$

8) Consider $f(x) = \frac{1}{2}x - 3$

a. Graph $f(x)$ on the grid shown.

b. Then find its inverse, $f^{-1}(x)$ and graph it on the same grid.

c. Does the combined graph have a line of symm
   Can you tell it's equation?

9) Simon's function machine is shown at the right.

What is $A(2)$?   If 81 came out of his machine, what was dropped in?

$$A(x) = 3^x$$

If 8 came out, what was dropped in? *be accurate on this to 2 decimal places.*

10) If 10^x *is equal to* 10^y, what do you know about x *and* y ?

11) On separate paper, solve the following equations, showing your work.

$$\frac{6}{15} = 2 - \frac{x}{5}$$ $$\frac{n}{n+1} = \frac{5}{7}$$