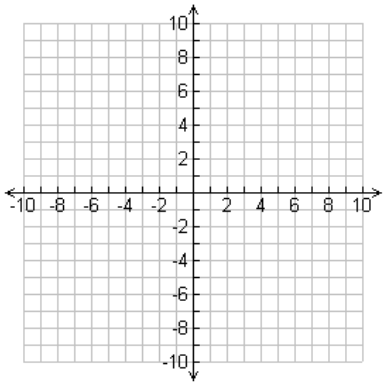
Secondary Math 2 **9.4 Homework** **Name: _____ Period: _____**

Absolute Value Functions

Graph each function and identify the indicated properties. Be sure to include the "anchor points" and the x- and y-intercepts (if applicable). Round to the nearest hundredth.

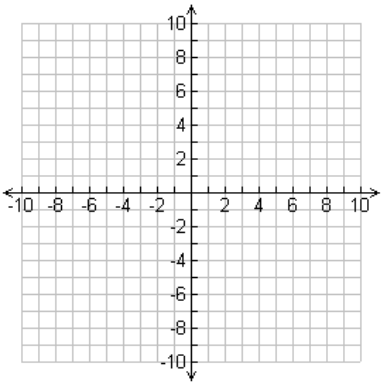
1. $y = -|x + 3| - 1$



Domain:

Range:

2. $f(x) = \frac{1}{2}|x + 3| + 4$



Domain:

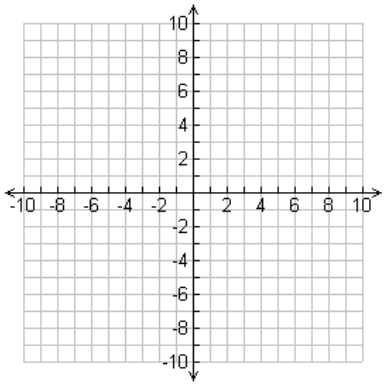
Range:

Review Problems:

3. **Solve the system of equations by graphing**.

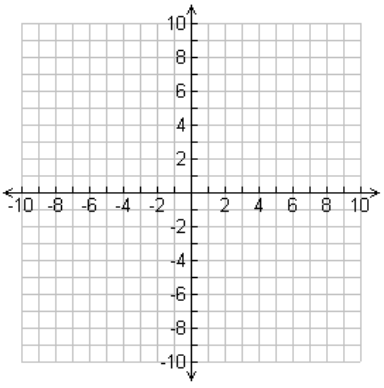
$y = (x + 1)^2 - 3$

$y = 2x - 2$



4. **Graph the following Piecewise function**

$$f(x) = \begin{cases} 3x - 7, if\ x \leq 2 \\ -2x + 6, if\ x > 2 \end{cases}$$

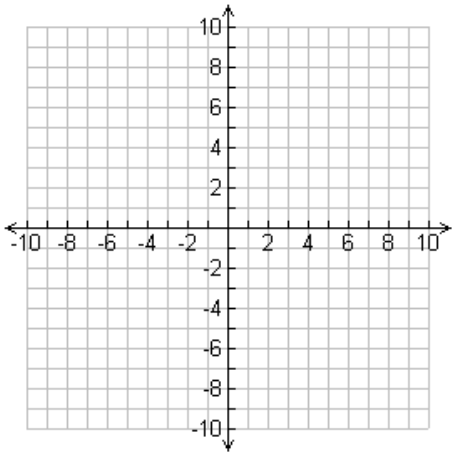


5. **Solve the system of equations algebraically.**
$x^2 + y^2 = 10$
$y = x + 4$

6. **Solve the system of equations by substitution or elimination.**
$-12x - 60y = 0$
$20x + 100y = 0$

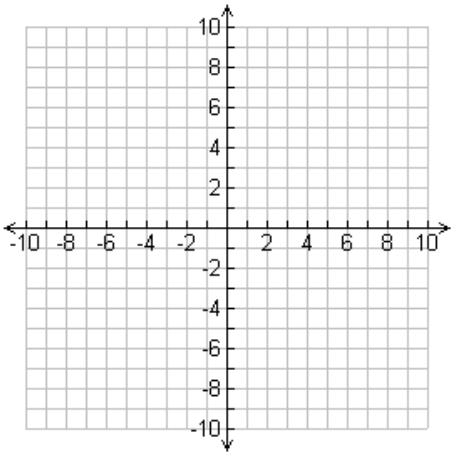
Create a graph showing each pair of functions. Describe any similarities and differences between the graphs, including domain and range.

7. $f(x) = |x|$
$g(x) = -\frac{1}{2}|x| + 5$



Describe similarities & differences:

8. $f(x) = |x|$
$g(x) = |x + 1| - 2$



Describe similarities & differences: