Name:_____ Date:_____

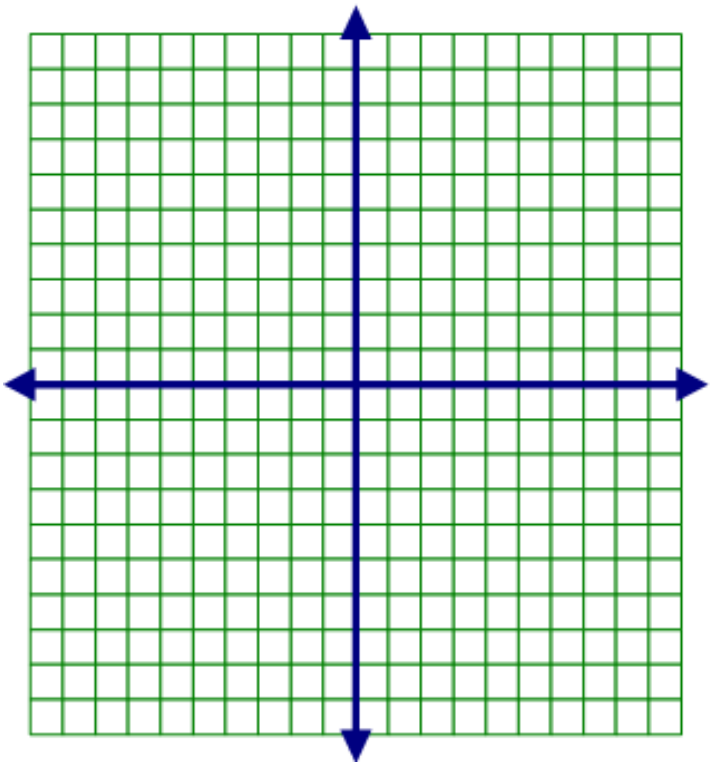
UNIT 6B **LESSON 16**

DO NOW: Describe how the graph of the function $f(x) = -\frac{1}{2}(x-5)^2 + 7$ is related to the parent function $f(x) = x^2$.

AIM: SOLVING FUNCTIONS GRAPHICALLY

1. a. On the set of axes below, draw the graphs of y = f(x) and y = g(x).

$f(x) = |x|$ $g(x) = \left|\frac{1}{2}x\right|$

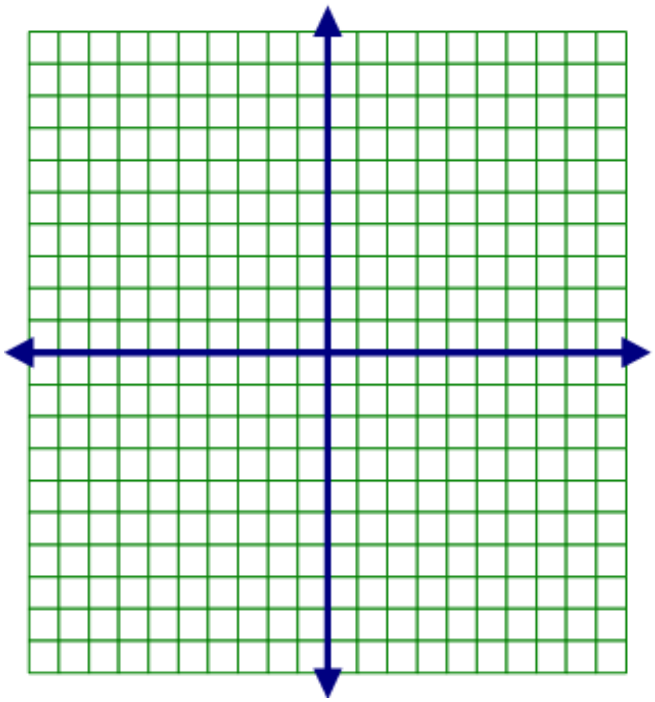


b. Explain how decreasing the coefficient of *x* affects the graph of the equation $f(x) = |x|$

c. When does $\boldsymbol{f(x) = g(x)}$?

2. a. Graph the following systems of equations graphically over the interval $-4 \le x \le 2$

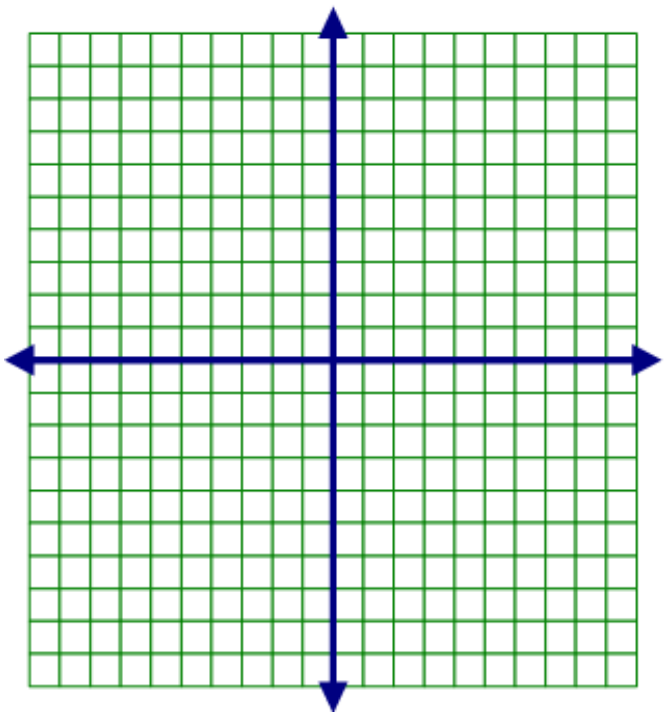
$f(x) = x^2 + 2x - 1$ $\quad\quad$ $g(x) - 5 = x$



b. When does $\boldsymbol{f(x) = g(x)}$?

3. Solve the following system of equations graphically.

$\boldsymbol{f(x) = |x - 4| + 3}$ $\quad\quad$ $\boldsymbol{g(x) = 7}$



(b) When does $\boldsymbol{f(x) = g(x)}$?

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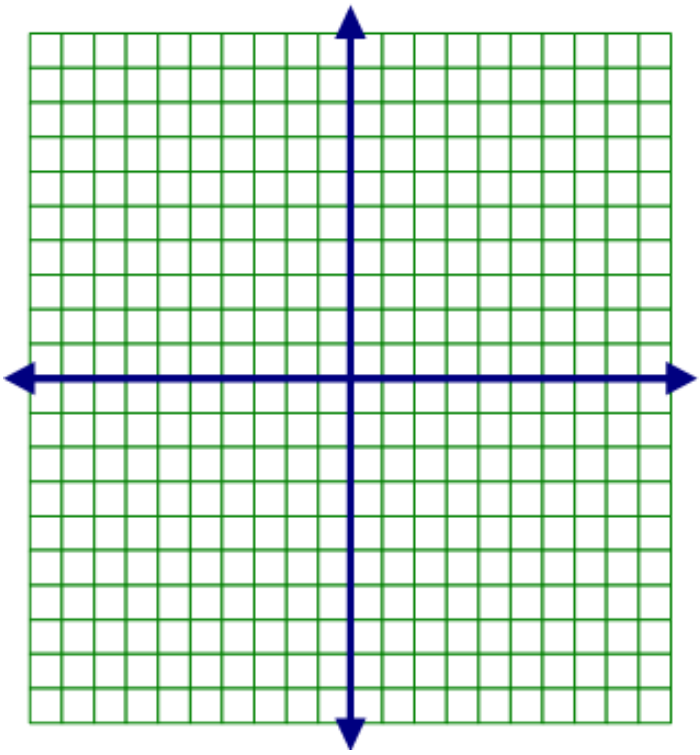
UNIT 6B **LESSON 16**

4. Solve the following system of equations graphically.

$y = 2^x - 1$
$y = x^3$



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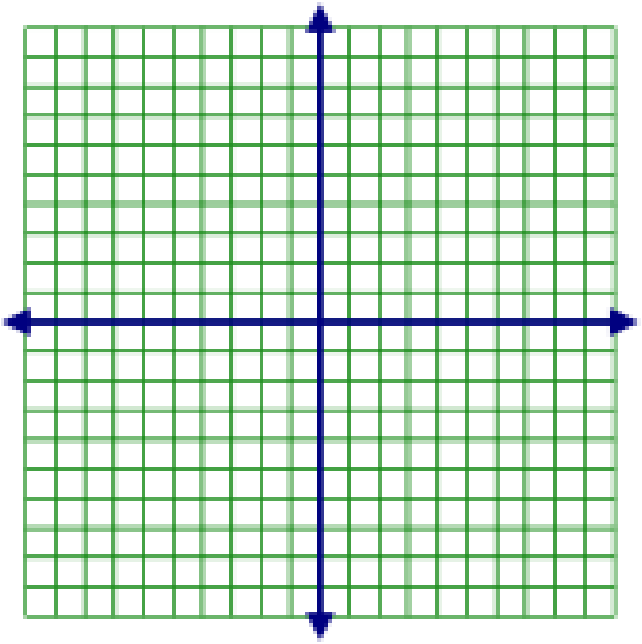
UNIT 6B **LESSON 16**

HW#____

1. On the set of axes below, solve the following system of equations graphically and state the coordinates of *all* points in the solution set.

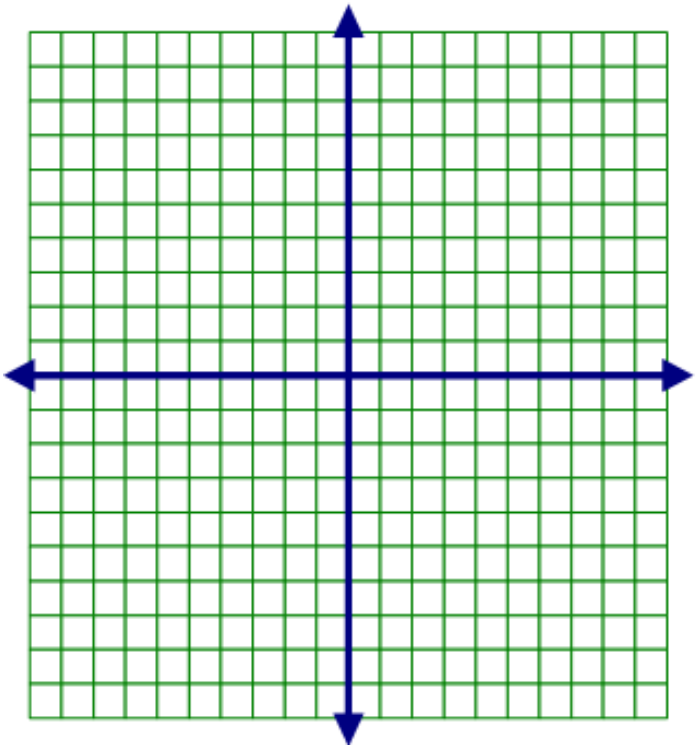
$y = -x^2 + 6x - 3$

$x + y = 7$



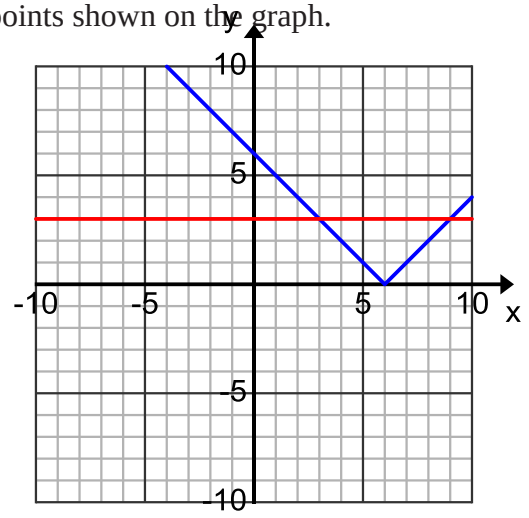
2. a. Graph the following system of equations.

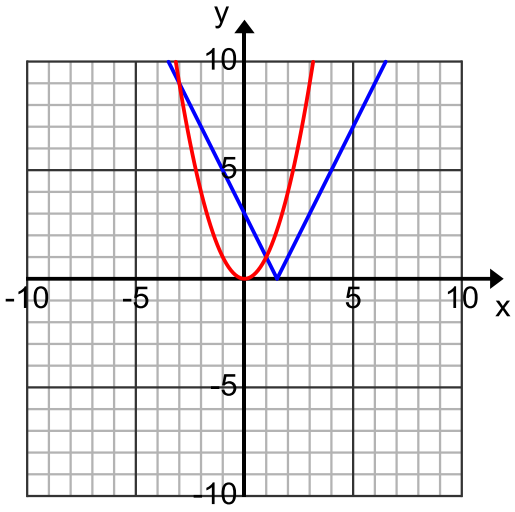
$\boldsymbol{f(x) = |x + 2| - 3}$ $\boldsymbol{g(x) = -1}$



b. When does $\boldsymbol{f(x) = g(x)}$?

3. In each exercise, the graphs of the functions f and g are shown on the same Cartesian plane. Identify the solution set to the equation $f(x) = g(x)$. Assume that the graphs of the two functions only intersect at the points shown on the graph.

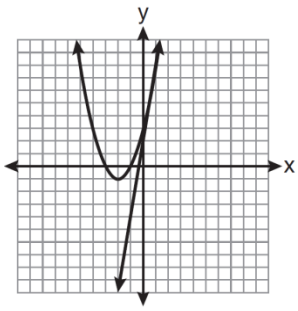


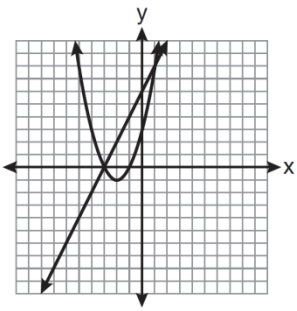


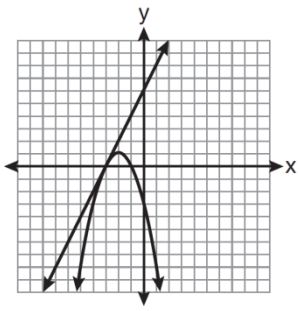
Solution Set:_____ Solution Set:_____

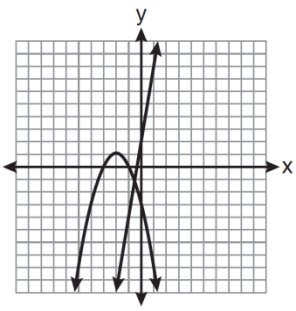
4. Which graph could be used to find the solution of the system of equations $y = 2x + 6$ and $y = x^2 + 4x + 3$?

1)









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