Graphing Systems of Linear and Quadratic Equations NOTES (REI.7)

Name: Key Period: _____

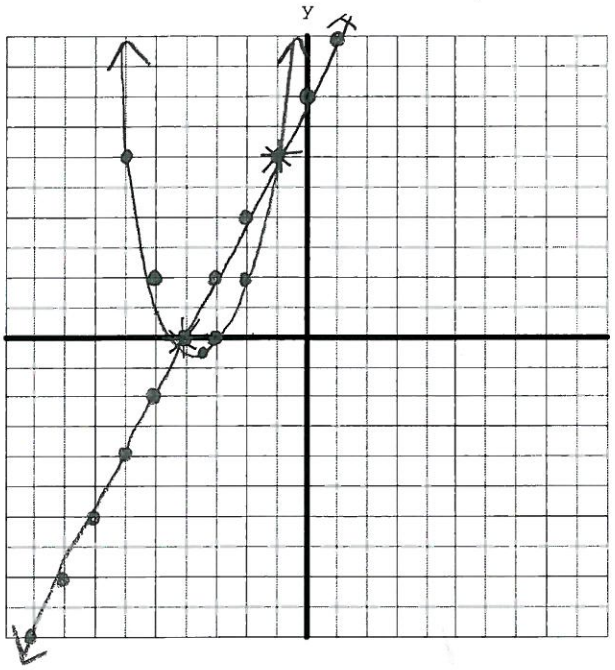
Graph both equations on the same graph, and then state where the graphs intersect.

Reminders:

- $y = mx + b$
- Use a table with as many ordered pairs as possible for graphing the quadratic

1. $y = x^2 + 7x + 12$
   $-8x + 4y = 32$

$4y = 8x + 32$
$y = 2x + 8$



x	y
-6	6
-5	2
-4	0
-3.5	-.25
-3	0
-2	2
-1	6

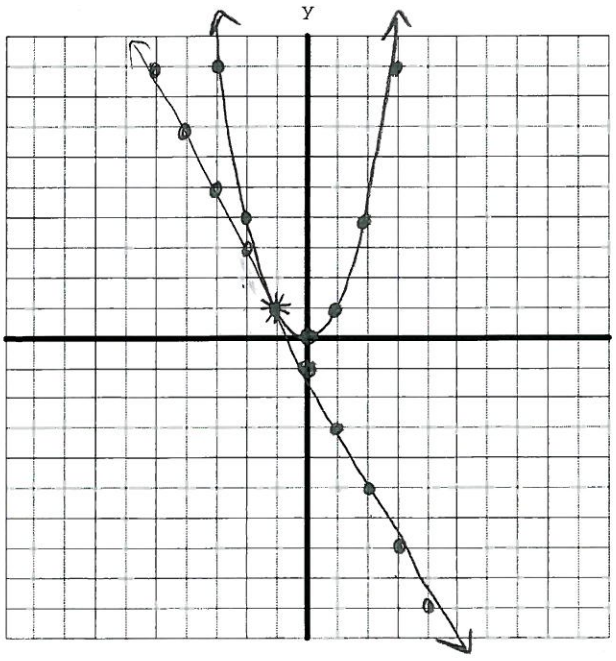
$x = \frac{-7}{2(1)} = -3.5$

$y = (-3.5) + 7(-3.5) + 12$
$y = 12.25 - 24.5 + 12$
$y = -.25$

Points of Intersection: (-4, 0) and (-1, 6)

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

$3y = -6x - 3$
$y = -2x - 1$



x	y
-3	9
-2	4
-1	1
0	0
1	1
2	4
3	9

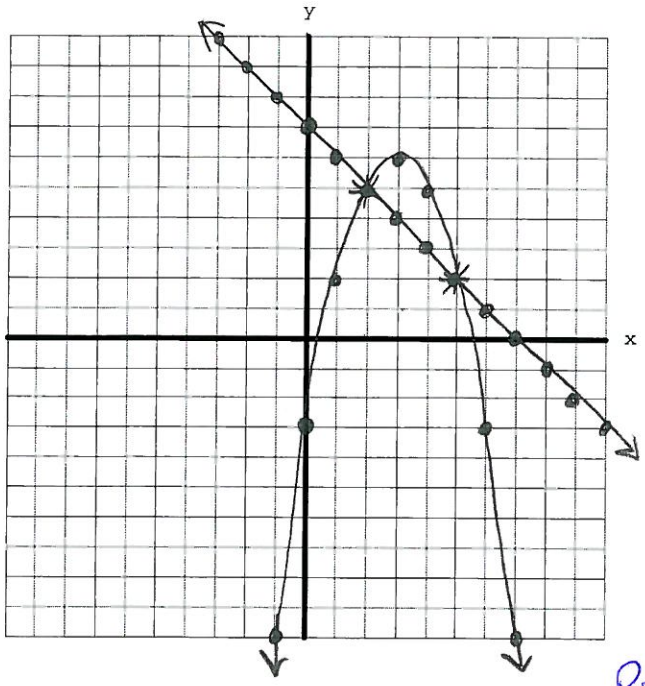
$x = \frac{0}{2(1)} = 0$

$y = (0)^2 = 0$

Points of Intersection: (-1, 1)

3. $y = -x^2 + 6x - 3$
$x + y = 7$

$y = -x + 7$



x	y
-1	-10
0	-3
1	2
2	5
3	**6**
4	5
5	2
6	-3
7	-10

$x = \frac{-6}{2(-1)} = 3$

$y = -(3)^2 + 6(3) - 3$

$y = -9 + 18 - 3$

$y = 6$

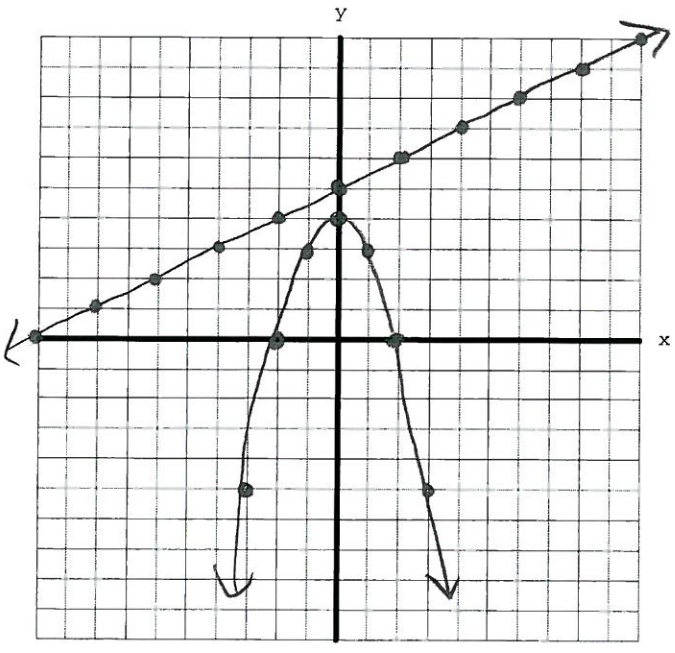
Points of Intersection: (2,5) and (5,2)

4. $y = -x^2 + 4$
$2x - 4y = -20$

$y = -x^2 + 0x + 4$

$-4y = -2x - 20$

$y = \frac{1}{2}x + 5$



$x = \frac{0}{-2(-1)} = \frac{0}{2} = 0$

$y = -(0)^2 + 0(0) + 4$

$y = 4$

x	y
-3	-5
-2	0
-1	3
0	**4**
1	3
2	0
3	-5

Points of Intersection: No Solution