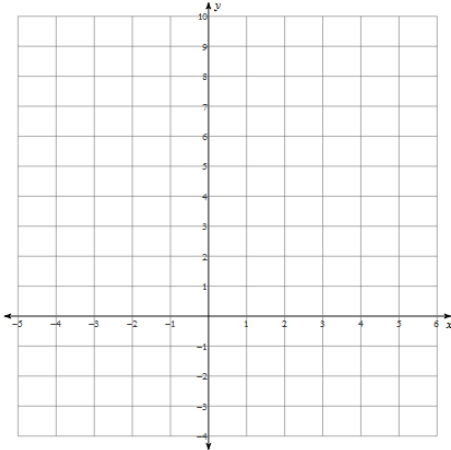
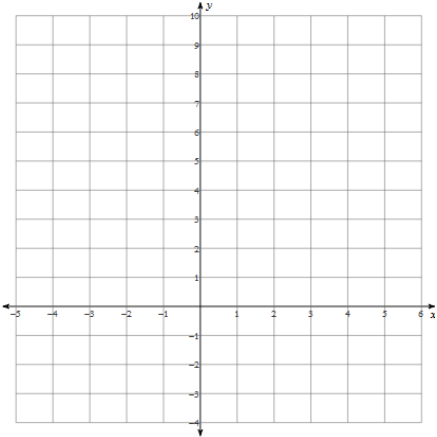
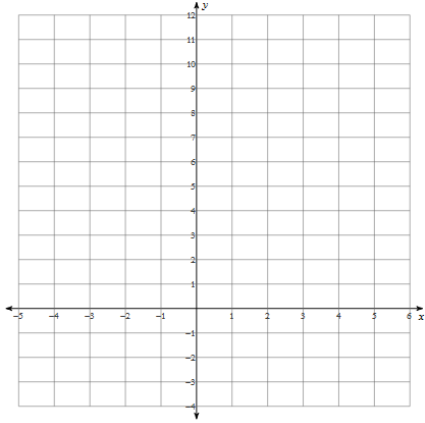


Solving Systems of Equations Graphically

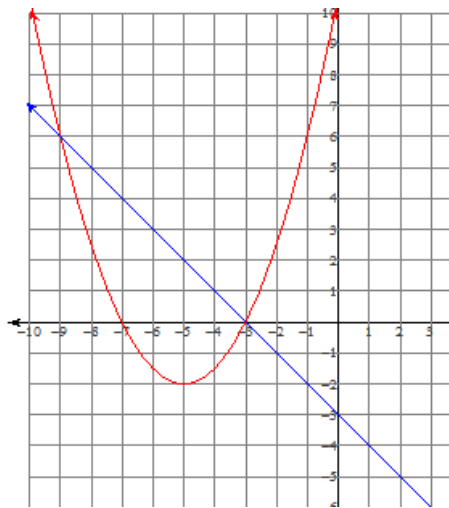
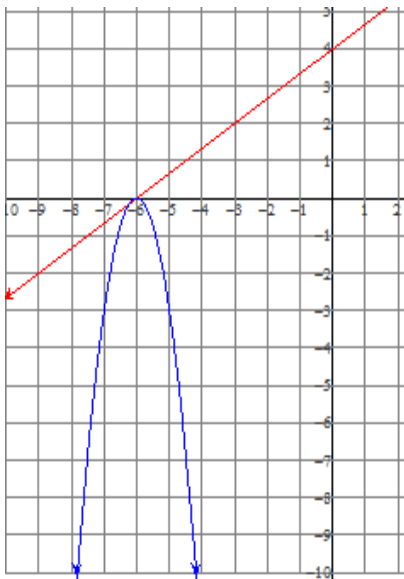
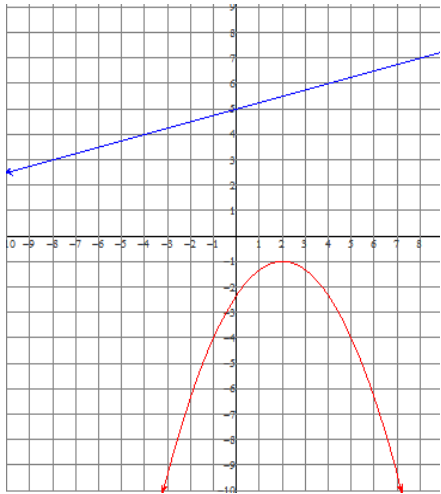
System of Linear-Quadratic Equations

- A linear equation and a quadratic equation involving the same variables
- A graph of this system involves a line and a parabola

Solve the following systems of equations graphically.

$y = x^2 - 6x + 9$ $y = -x + 5$	$y = (x + 1)^2 - 3$ $y = -3$	$y = 2x^2 + 3$ $y = x + 2$
		
Number of intersection points: ____ Solutions: _____	Number of intersection points: ____ Solution: _____	Number of intersection points: ____ Solutions: _____
Verify solutions in both equations:	Verify solution in both equations:	

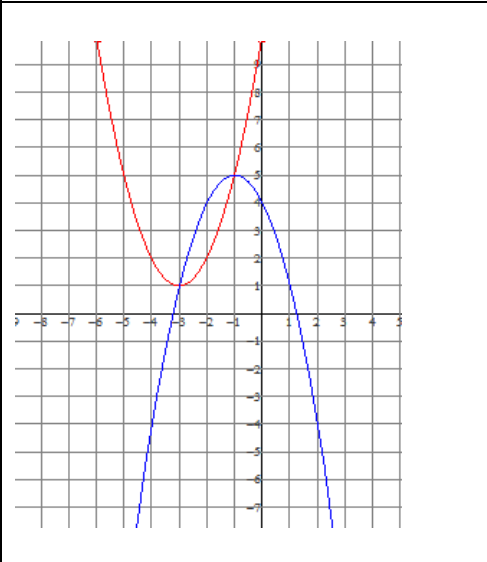
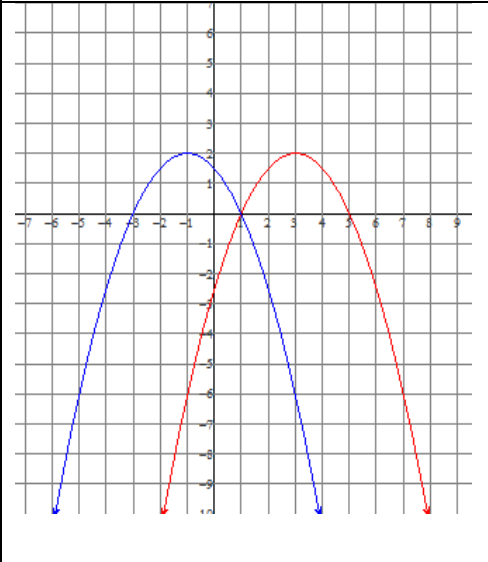
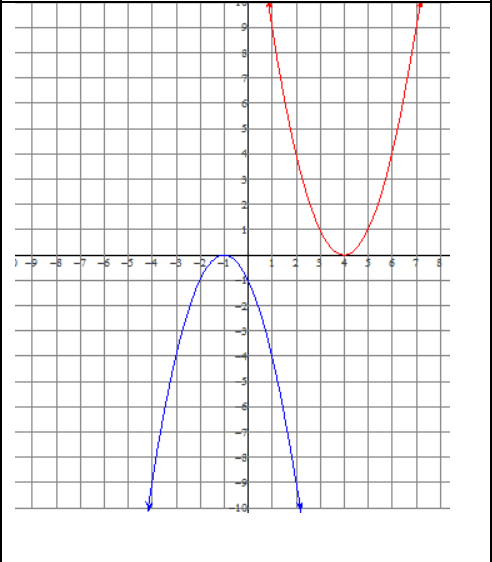
Solve the following systems of equations graphically using a graphing calculator.

$y + x + 3 = 0$ $y - \frac{1}{2}x^2 - 5x - \frac{21}{2} = 0$	$y + 3x^2 = -36x - 108$ $-\frac{2}{3}x + y = 4$	$y - \frac{1}{4}x - 5 = 0$ $y + \frac{1}{3}x^2 = \frac{4}{3}x - \frac{7}{3}$
Isolate y in both equations:	Isolate y in both equations:	Isolate y in both equations:
		
Number of intersection points: ____	Number of intersection points: ____	Number of intersection points: ____
Solutions: _____	Solution: _____	Solutions: _____
Verify solutions in both equations:	Verify solution in both equations:	

System of Quadratic-Quadratic Equations

- Two quadratic equations involving the same variables
- A graph of this system involves two parabolas

Solve the following systems of equations graphically using a graphing calculator.

$y - x^2 - 6x - 10 = 0$ $y + x^2 + 2x - 4 = 0$	$y + \frac{1}{2}x^2 - 3x + \frac{5}{2} = 0$ $y + \frac{1}{2}x^2 = -x + \frac{3}{2}$	$y - x^2 + 8x - 16 = 0$ $y + x^2 + 2x + 1 = 0$
Isolate y in both equations:	Isolate y in both equations:	Isolate y in both equations:
		
Number of intersection points: ____ Solutions: _____	Number of intersection points: ____ Solution: _____	Number of intersection points: ____ Solutions: _____
Verify solutions in both equations:	Verify solution in both equations:	

Extra Practice:

Solve each of the following systems of equations graphically and verify your solutions algebraically.

1. $x - y + 1 = 0$

$$x^2 - 6x + y + 3 = 0$$

2. $2x^2 - 16x - y = -35$


$$2x^2 - 8x - y = -11$$

3. $2x^2 + 16x + y = -26$

$$x^2 + 8x - y = -19$$

Solutions:

1. $(1, 2), (4, 5)$

2. $(3, 5)$ 

3. $(-3, 4), (-5, 4)$

How do you know
that the graphs do not
intersect again at a
greater value of y ?