Name_____ Date_____ Period_____

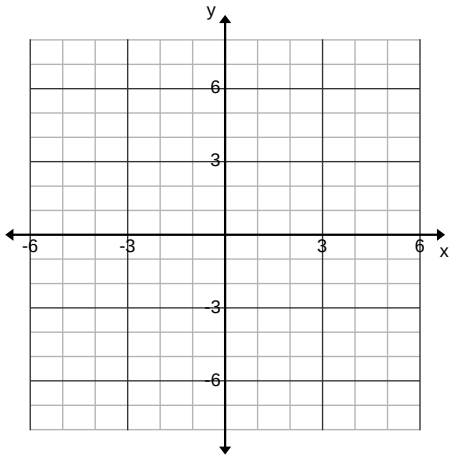
SOLVING A LINEAR AND QUADRATIC SYSTEM WORKSHEET

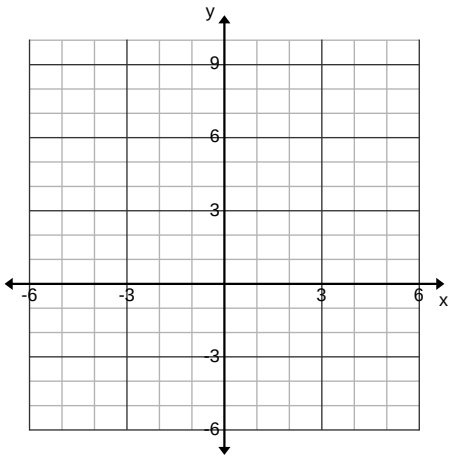
Methods for solving: graphically and algebraically - substitution and elimination
Number of Solutions Possible: 0, 1 or 2

Solve the systems graphically.

1) $y = -x^2 + 2x + 4$
$x + y = 4$

2) $y = x^2 + 2x + 1$
$y = 2x + 5$





Solve the systems using the substitution method.

3) $y = x^2 + 2x + 7$
$y = 6x + 3$

4) $y = x^2 + 2x - 6$
$3x + y = -12$

5) $y - 10x = 5$
$y = x^2 + 7x + 5$

6) $2x - y = -10$
$y = x^2 - 2x - 2$

Solve the systems using elimination.

7) $y = -8x$
$y = 1 + 16x^2$

8) $y = 2x^2 + 13x$
$y = -9 - 6x$

9) $y = x^2 + 2x - 8$
$y = 4x - 5$

10) The screen at the right shows the *y*- and *x*- values for the system $y = x^2 - 6x + 8$ and $y = x - 2$. Use the table to find the solutions of the system.

X	Y_1	Y_2
-1	15	-3
0	8	-2
1	3	-1
2	0	0
3	-1	1
4	0	2
5	3	3

X= -1

11) The price, *C*, in dollars per share, of a high-tech stock has fluctuated over a twelve-year period according to the equation $C = 14 + 12x - x^2$, where *x* is in years. The price *C*, in dollars per share, of a second high-tech stock has shown a steady increase during the same time period according to the relationship $C = 2x + 30$.

a) For what values are the two stock prices the same? Solve algebraically.

b) Determine the values of *x* for which the quadratic stock price is greater than the linear stock price. State your answer as an inequality. (Hint: You should be able to answer this almost immediately based upon your analysis in part (a) above.)