Name:_____   Date:_____

Pre Calculus 11: HW Section 8.2 Solving Systems of Equations by Elimination

1. Solve each system by using elimination:

i) $2x + 3y = 18$ $2x - 3y = -6$	ii) $7x - 4y = 26$ $3x + 4y = -6$
iii) $y = x^2 - 16x + 60 \qquad y = 12x - 55$	iv) $2y^2 + 20y + x = -40 \qquad 7y + 2x + 26 = 0$
v) $2x - 5 = 3y \qquad 2x^2 - 5x = y$	vi) $x^2 + 40x - y + 400 = 0 \qquad x^2 = y + 30x - 225$

vii) $2x^2 + 5x - 2y = 0 \qquad 0 = y + 3x + 6$	*viii*) $15x^2 + 8x = y \qquad 2 + 9x + y = 0$
ix) $x + y = 0 \qquad x^2 - y = 2$	*x*) $x^2 + x + 4 = y \qquad 8x + 4 = y$

2. The lines with equations $px + 3y = 15$ and $6x + qy = 30$ pass through the point (4,-3). What is the value of p+q?

3. Line "A" passes through the points (3,0) and (-9,9) and line "B" passes through the points (-5,0) and (4,6). What is the intersection point between lines "A" and "B"?

4. The following system has (5,-3) as a solution. What are the values of "a" and "b"?

$$ax + by = -11$$
$$2ax - 3by = 8$$

5. In the diagram, "V" is the vertex of the parabola with equations $y = -x^2 + 4x + 1$. Points "A" and "B" are intersections between the parabola and the line $y = -x + 1$. Find the distance from point "A" to "B".
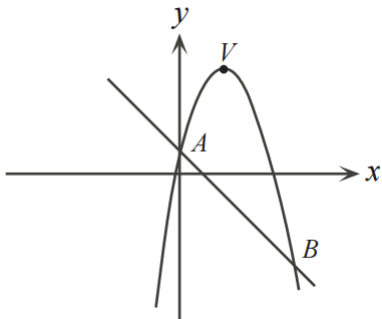
6. The lines $bx + y = 30$ and $x + by = c$ intersect at the point P(6,12), determine the value of "c":

7. Determine all ordered pairs (x,y) that satisfy the following system of equations:

$$x + y = 16$$
$$\frac{4}{7} = \frac{1}{x} + \frac{1}{y}$$

8. If $(x+1)(x-1)=8$, then what is the value of $(x^2+x)(x^2-x)$

9. The line $y=2x+2$ intersects the parabola $y=x^2-3x+c$ at two points. One of these points is (1,4). Determine the coordinates of the second point of intersection.

10. Solve the system: $\begin{aligned} x^2-xy+8&=0 \\ x^2-8x+y&=0 \end{aligned}$

(b) The quadratic equation $x^2 + 6x + k = 0$ has two equal roots. What is the value of k?

(c) The line $y = 2x + 2$ intersects the parabola $y = x^2 - 3x + c$ at two points. One of these points is $(1, 4)$. Determine the coordinates of the second point of intersection.