Name:_____ Date:_____

Pre Calculus 11: HW Section 8.1 Solving Systems of Equations by Graphing

1. Find the slope and y-intercept for each of the following linear function:

a) $y=-3x+17$ Slope:_____ Y-intercept:_____	b) $y=\dfrac{24-3x}{2}$ Slope:_____ Y-intercept:_____	c) $4x+3y=12$ Slope:_____ Y-intercept:_____
d) $-5x+8y-20=0$ Slope:_____ Y-intercept:_____	e) $\frac{2}{3}x-\frac{4}{5}y=12$ Slope:_____ Y-intercept:_____	f) $y=8x^2+5$ Slope:_____ Y-intercept:_____

2. Find the vertex, "X" intercepts, and "Y" intercepts for each of the following quadratic functions:

a) $y=(x-3)^2-7$ Vertex:_____ Y-int:_____ X-int:_____	b) $y=-(x+2)^2+8$ Vertex:_____ Y-int:_____ X-int:_____
c) $y=2(x+4)^2-9$ Vertex:_____ Y-int:_____ X-int:_____	d) $y=x^2+16x+73$ Vertex:_____ Y-int:_____ X-int:_____
e) $y=-2x^2+8x+20$ Vertex:_____ Y-int:_____ X-int:_____	f) $y=3x^2+9x+33$ Vertex:_____ Y-int:_____ X-int:_____

3. Graph each of the following lines with the grid provided on the right:

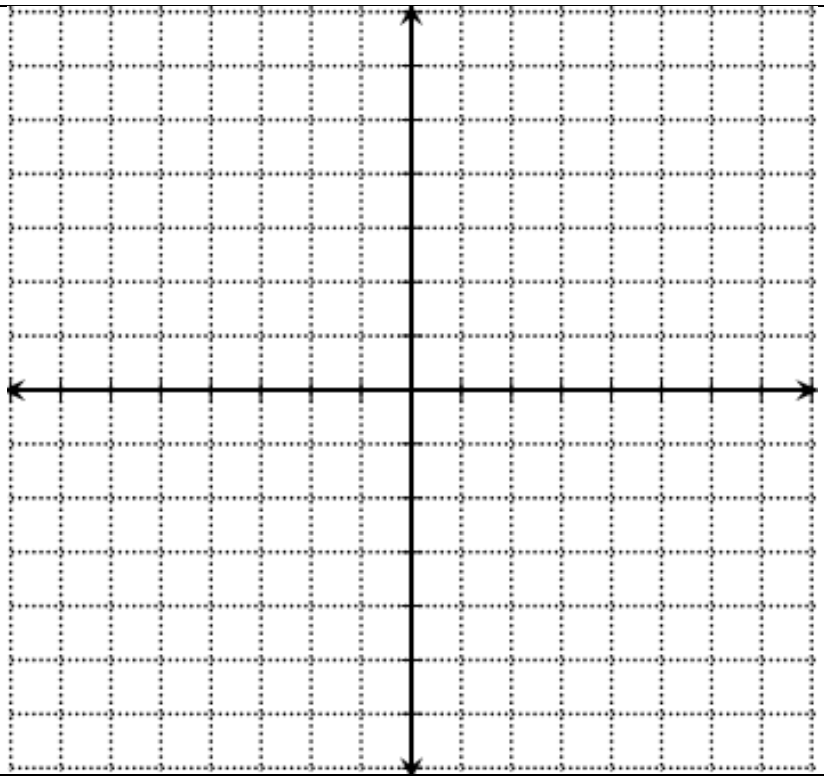
i) $y = \frac{3}{2}x - 5$

ii) $5x - 8y = 20$

iii) $y = (x-4)^2 - 5$

iv) $12 - 4y = 3x$

v) $y = -2(x+1)^2 + 8$



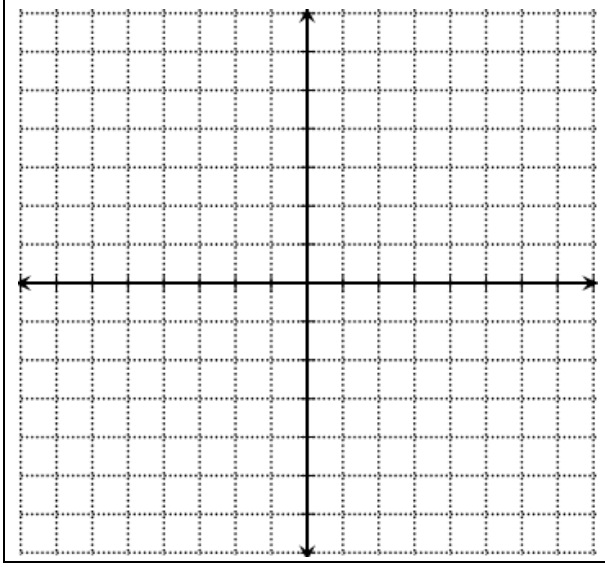
4. What is the maximum number of solutions for each system?

a) A system of equations with two linear functions:

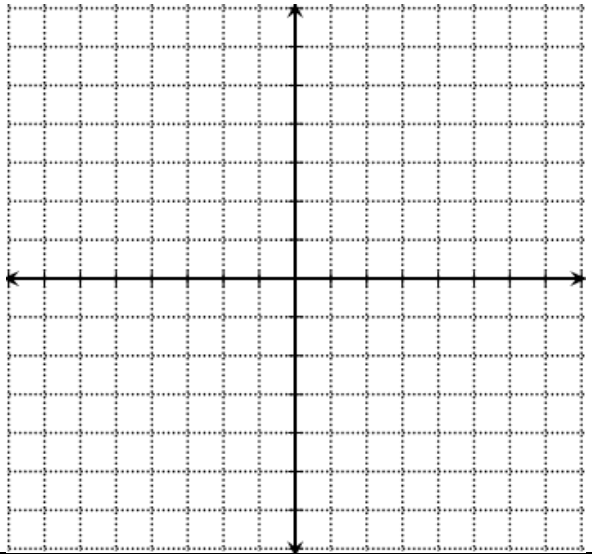
b) A system of equations with two different quadratic functions:

5. Graph each system using the grid provided and then find points of intersections:

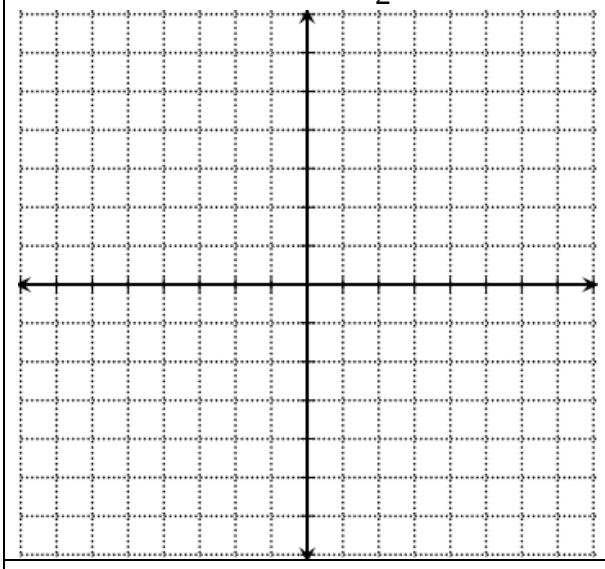
a) $y = -2x + 1$ $\quad y = 2x - 3$



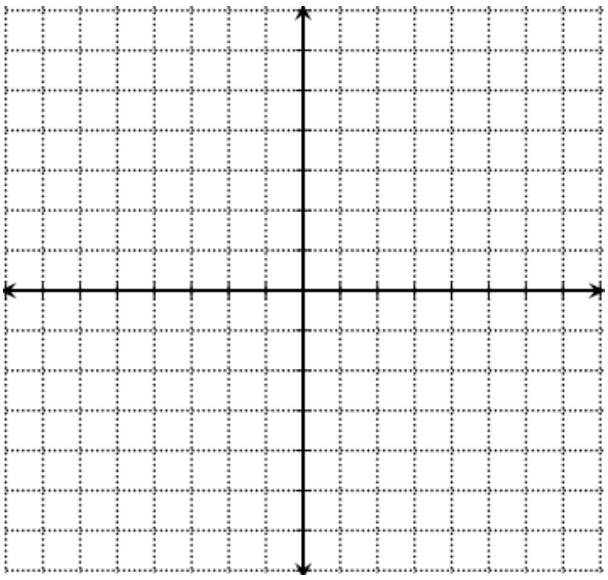
b) $y = \frac{2}{3}x + 2$ $\quad y = \frac{5}{3}x - 1$



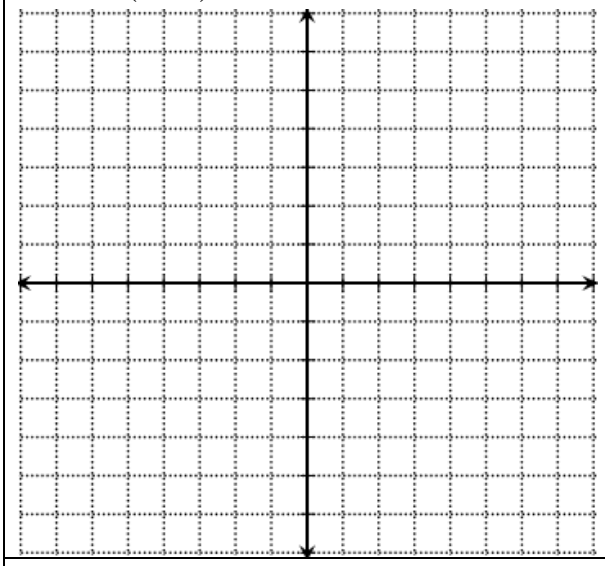
c) $4y = 15x - 9$ $\quad y = \dfrac{-(x-4)^2}{2} + 6$



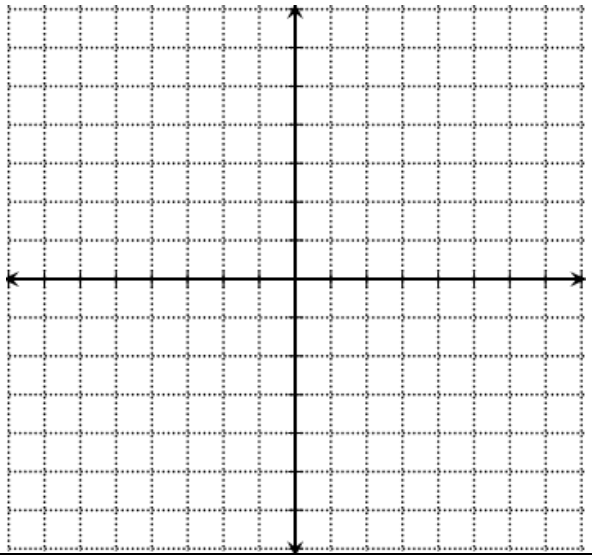
d) $y = 2(x-1)^2 - 4$ $\quad y + 8x + 4 = 0$



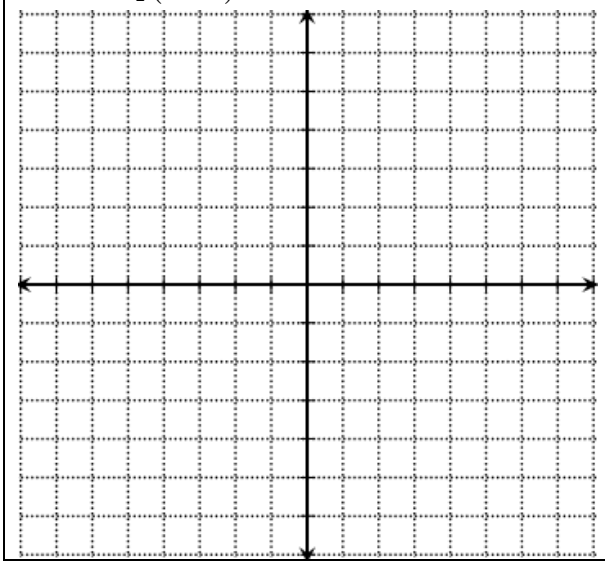
e) $y = -(x-3)^2 + 7$ $\quad x + 2 = y$



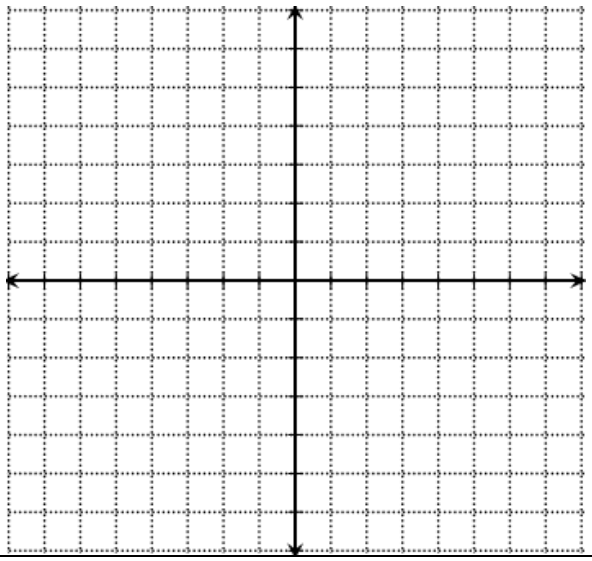
f) $y = -2(x+2)^2 + 5$ $\quad y + 4x + 3 = 0$



g) $y = -\frac{1}{2}(x-5)^2 + 7$ $\quad y = 8 - x$



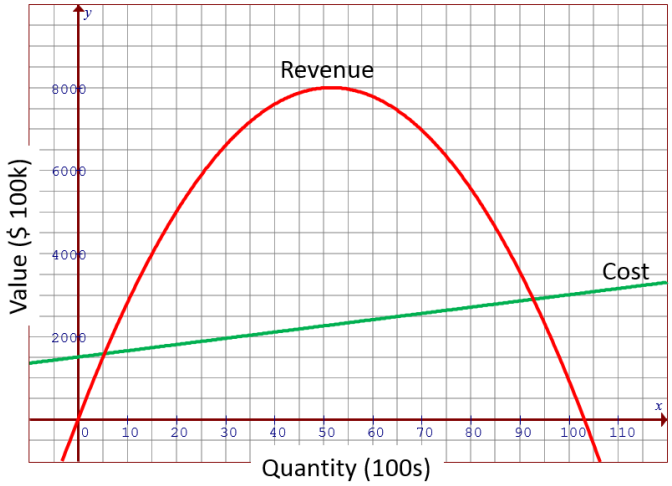
h) $y = (x-6)^2 - 1$ $\quad y = -(x-5)^2 + 4$



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

7. What does it mean when a line is tangent to a parabola?

8. The following graph shows the revenue and cost for producing and selling a certain number of high end watches in a company. Profit is defined as: $\text{Profit} = \text{Revenue} - \text{Cost}$. Use the graph to answer the following questions: Cost $y=15x+1500$, Revenue: $y=-3(x-51.5)^2+8000$



a) What are the solutions to this system? What do the solution represent?

b) Using this graph, what quantity will generate the maximum profit?

c) What would happen to the company financially if they produced over 100,000 watches?