

Warm Up

$$1) \begin{bmatrix} -5 & 2 & -2 \\ 4 & -2 & 0 \end{bmatrix} - \begin{bmatrix} 6 & -5 & -6 \\ 1 & 3 & -3 \end{bmatrix}$$

$$2) -2u \begin{bmatrix} 7u & 3w^2 & 5u & 5 \end{bmatrix}$$

$$3) \begin{bmatrix} -3 & 5 \\ -2 & 1 \end{bmatrix} \cdot \begin{bmatrix} 6 & -2 \\ 1 & -5 \end{bmatrix}$$

$$4) \begin{bmatrix} 5 & 3 & 5 \\ -1 & 5 & 0 \end{bmatrix} \cdot \begin{bmatrix} -4 & 2 \\ -3 & 4 \\ 3 & -5 \end{bmatrix}$$

Pass the Problem Review

Matrix Operations DLT-Extra Credit

1.) **Multiple Choice** What is the result of dividing $x^3 - 6x + 7$ by $x - 2$?

Ⓐ $x^2 - 2x - 2 + \frac{11}{x - 2}$

Ⓑ $x^2 - 2x - 2 + \frac{3}{x - 2}$

Ⓒ $x^2 + 2x - 2 + \frac{3}{x - 2}$

Ⓓ $x^2 + 2x - 2 - \frac{11}{x - 2}$

Ⓔ $x^2 - 2x + 2 + \frac{3}{x - 2}$

2.) **Multiple Choice** Which of the following is the factorization of $x^3 - 5x^2 - 16x + 80$?

Ⓐ $(x - 4)(x + 4)(x + 5)$

Ⓑ $(x - 4)^2(x + 5)$

Ⓒ $(x - 4)(x + 5)^2$

Ⓓ $(x - 4)(x + 4)(x - 5)$

Ⓔ $(x + 4)^2(x + 5)$

*When finished, please grab a piece of graph paper.

Solving Non-linear Systems

Objectives:

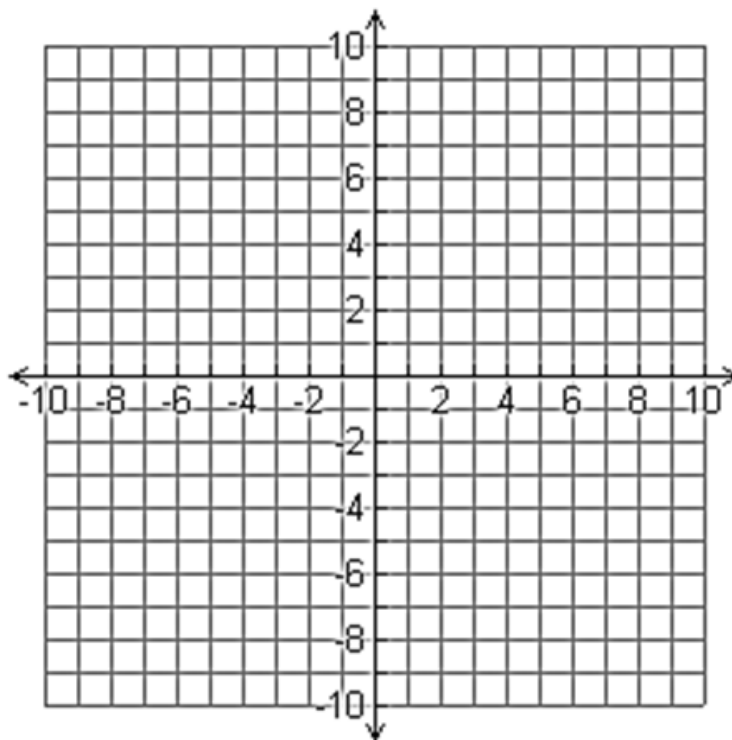
- Determine if an ordered pair is a solution to the system.
- Graph non-linear systems by hand and determine the solution(s).
- Graph systems using a graphing calculator and determine the solution(s).
- Solve non-linear systems algebraically.

Solving Non-linear Systems

Review:

Graph.

1) $y = -2x - 6$

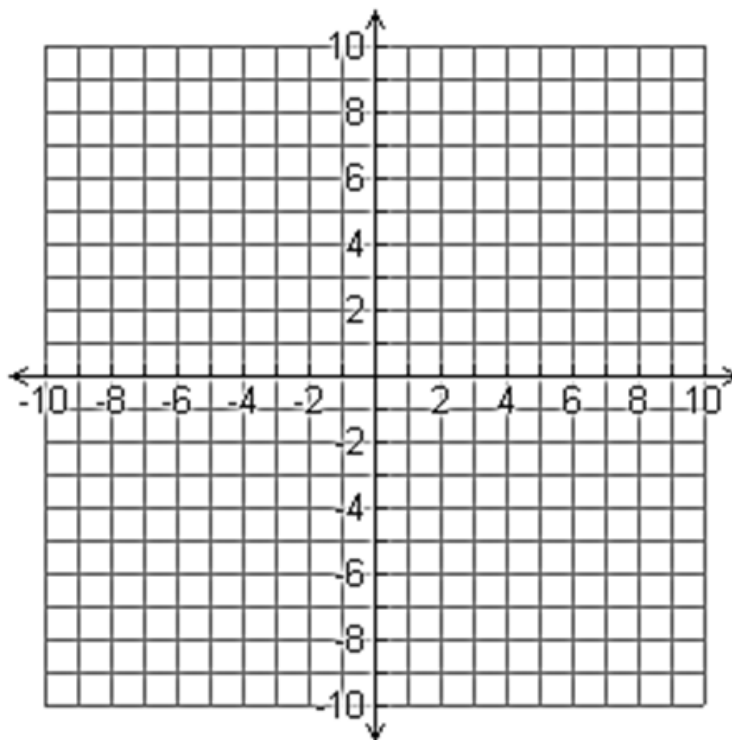


Solving Non-linear Systems

Review:

Graph.

2) $x + 2y = 8$



Solving Non-linear Systems

Review:

Graph.

$$y = 2x - 6$$

$$3) y = -x^2 - 2x - 1$$

$$y = ax^2 + bx + c$$

$$V\left(\frac{-b}{2a}, 0\right)$$

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

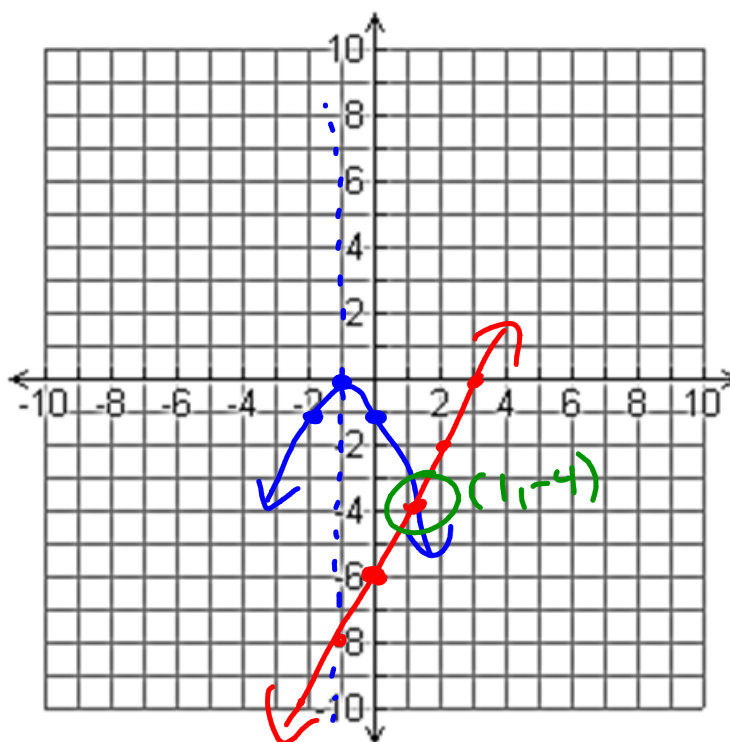
$$y = -(-1)^2 - 2(-1) - 1$$

$$y = -(1) + 2 - 1$$

$$y = -1 + 2 - 1$$

$$y = 1 - 1$$

$$V(-1, 0)$$



Solving Non-linear Systems

Review:

Graph.

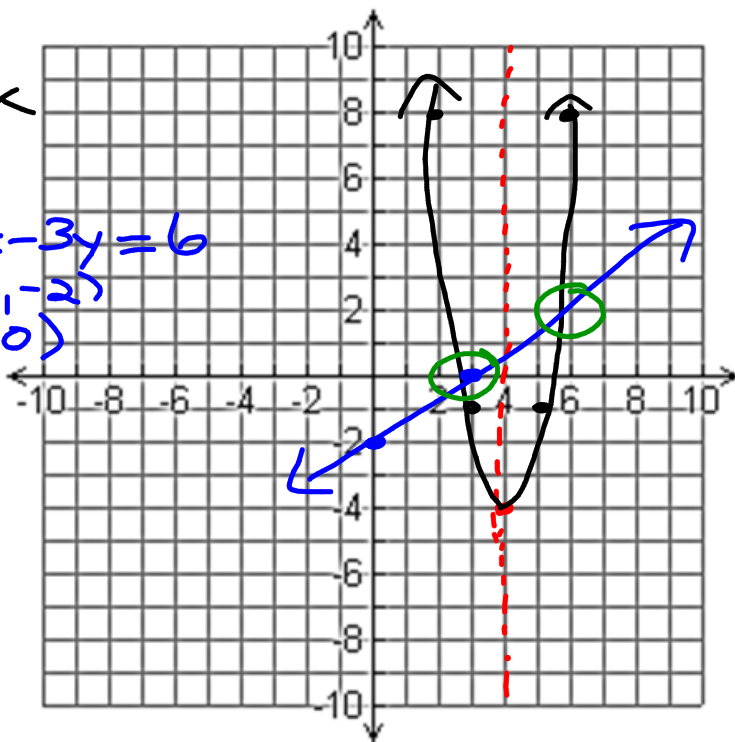
$$y = a(x-h)^2 + k$$

4) $y = 3(x-4)^2 - 4$

$V(4, -4)$

$2x - 3y = 6$
 $(0, -2)$
 $(3, 0)$

x	4
2	8
4	-4
5	1
6	8



Solving Non-linear Systems

Review:

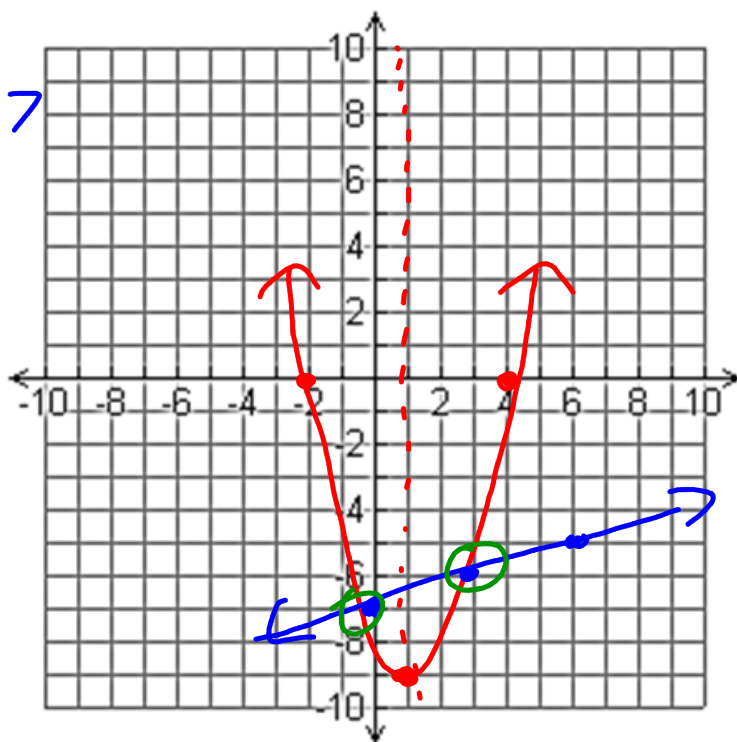
Graph. $y = \frac{1}{3}x - 7$

5) $y = (x+2)(x-4)$

Halfway
between $x = -2$ and $x = 4$
✓ $(1, -9)$

$$y = (1+2)(1-4)$$

$$y = (3)(-3)$$

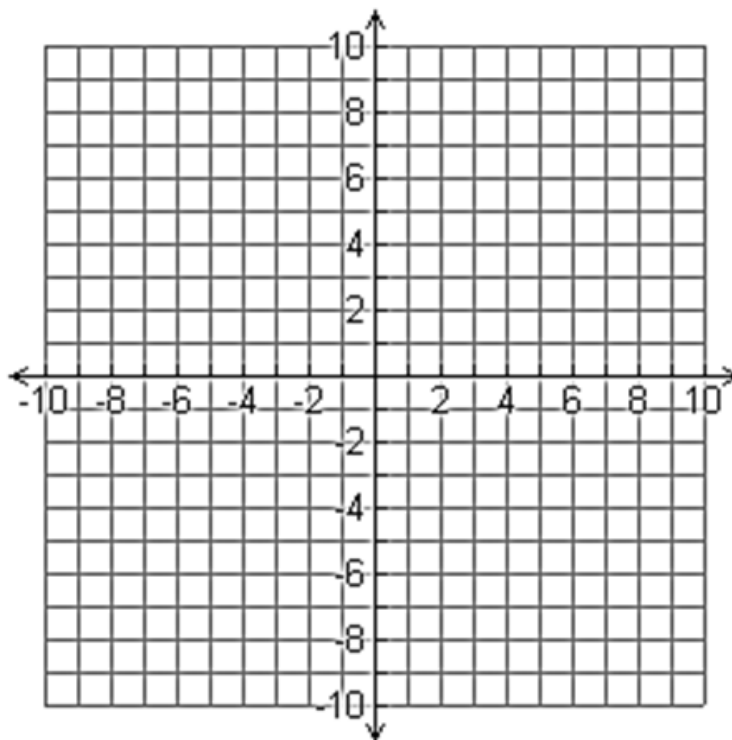


Solving Non-linear Systems

Review:

Graph.

6) $y = |x| - 4$

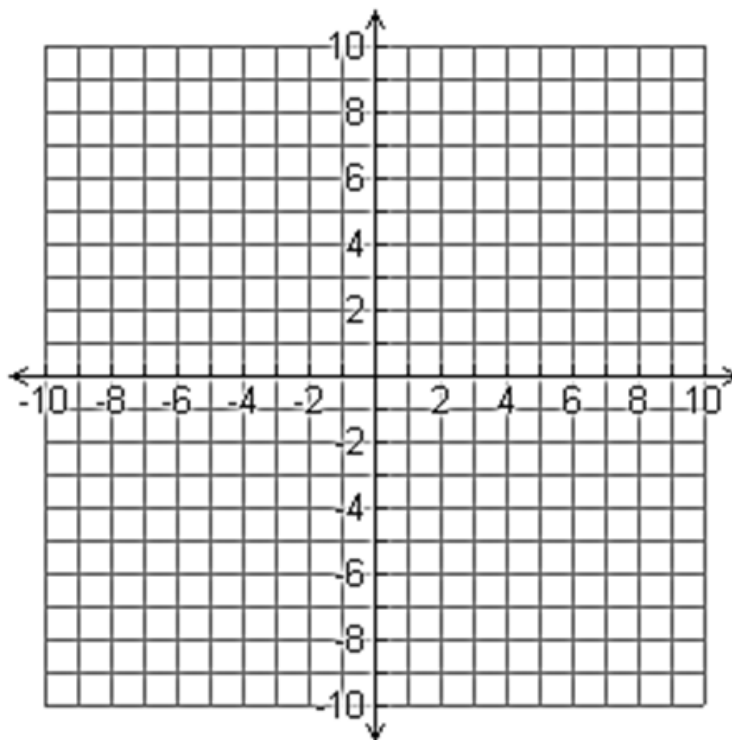


Solving Non-linear Systems

Review:

Graph.

7) $y = -|x-2|+1$



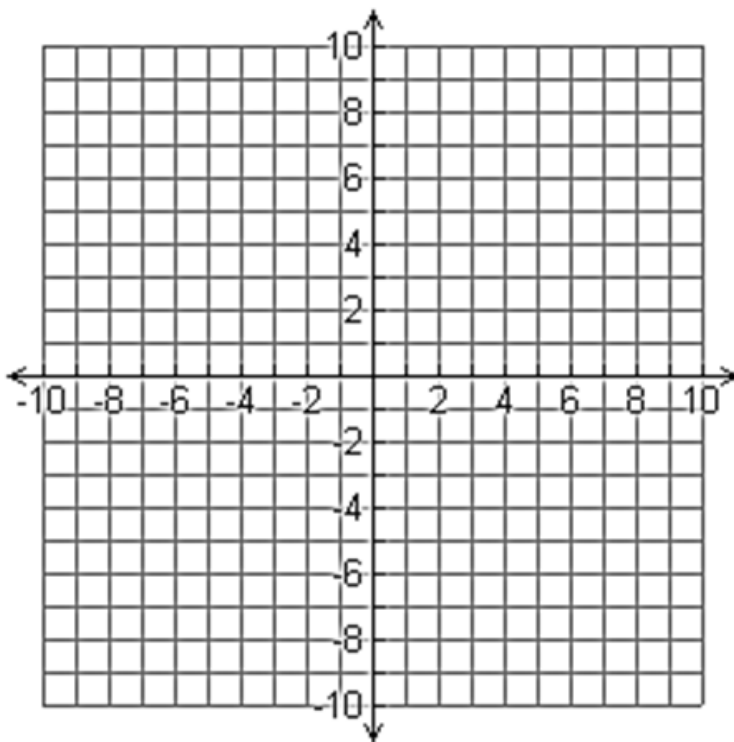
Solving Non-linear Systems

Graph the systems by hand and determine the solution(s).

Ex 1:

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

$$y = 2x + 1$$



Solving Non-linear Systems

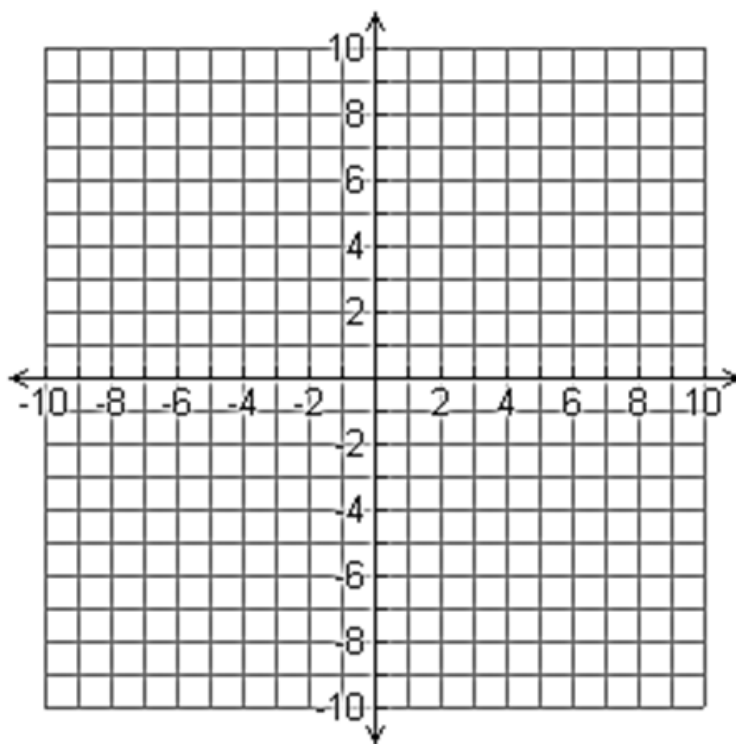
Graph the systems by hand and determine the solution(s).

Try #8 on

Worksheet #1

$$x - 2y = -2$$

$$y = |x + 2| - 1$$



Solving Non-linear Systems

Graph the systems using a graphing calculator and determine the solution(s).

a) $y = x^3 + 5x + 4$

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

b) $y = x^4 - 3x^3 + 2x^2 - 1$

$$y = x^2 + 3x + 1$$

Homework:

Solving by Graph WS # 1 (start)

pg 215 / 25, 31, 35, 39, 44 (due on Thurs)

