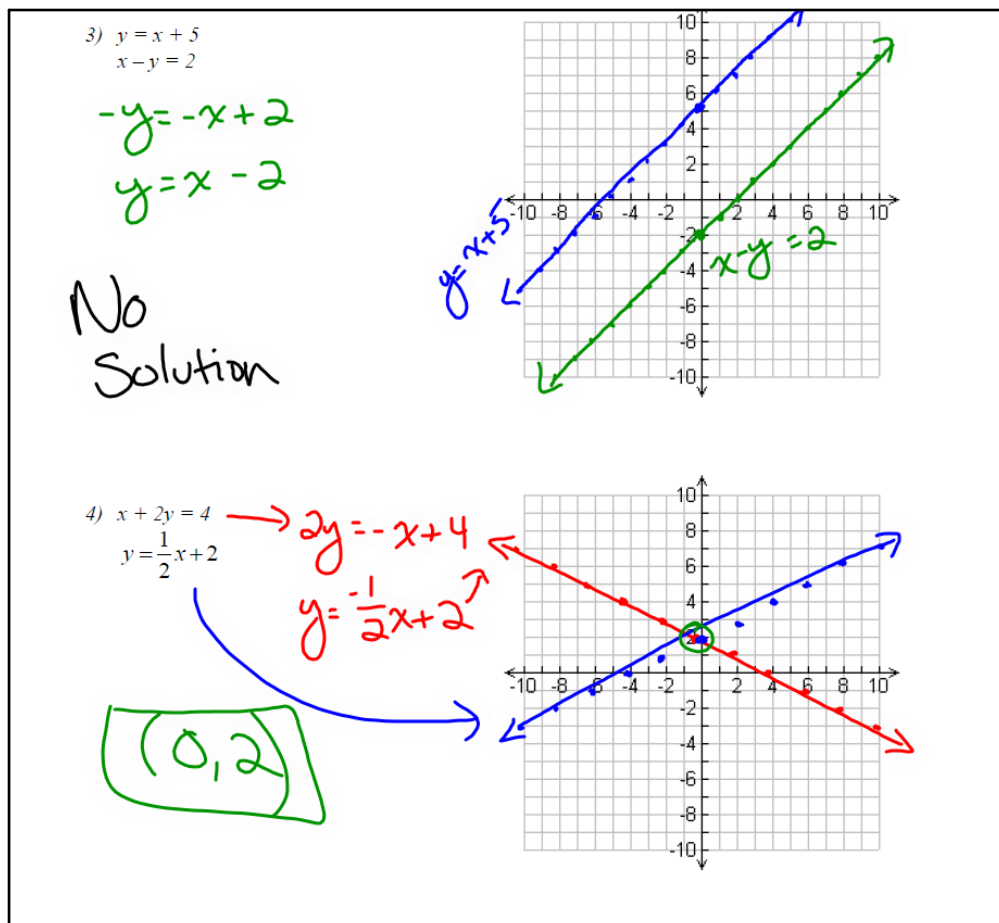## *Systems of Equations Graphically - Day 2*

Do Now

1. Pick up a foldable, ruler, scissors and glue stick

2. Cut along the dotted lines ONLY

3. Fold in the flaps of the foldable

4. Graph each example

5. Glue into notebook
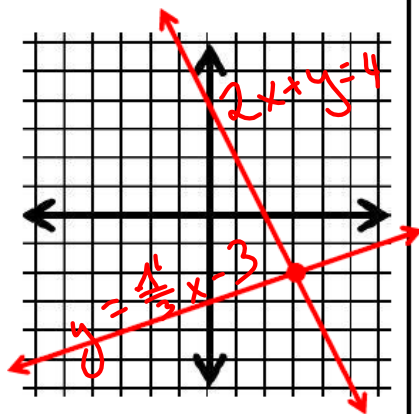
You **don't** have to check

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3) $y = x + 5$
    $x - y = 2$

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

No Solution

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

4) $x + 2y = 4$ → $2y = -x + 4$
    $y = \frac{1}{2}x + 2$ $y = \frac{-1}{2}x + 2$

$(0, 2)$

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1

example 1:

Solve the following system of linear equations by graphing.

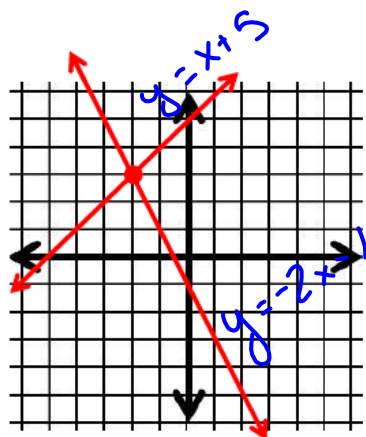$$\begin{cases} y = \frac{1}{3}x - 3 \\ 2x + y = 4 \end{cases} \quad \rightarrow \quad y = -2x + 4$$

Solution:
(3,-2)

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example 2:

Solve the following system of linear equations by graphing.

$$\begin{cases} 2x + y = -1 \quad \rightarrow \quad y = -2x - 1 \\ 3y - 15 = 3x \quad \rightarrow \quad y = x + 5 \end{cases}$$
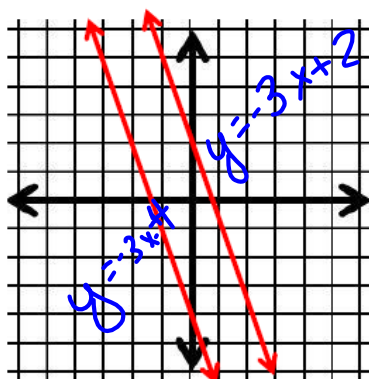
Solution:
(-2,3)

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2

example 3:

Solve the following system of linear equations by graphing.

$$\begin{cases} y = -3x + 2 \\ 3x + y = -4 \end{cases} \rightarrow \quad y = -3x - 4$$

NO SOLUTION

*same slope
*different y-intercept
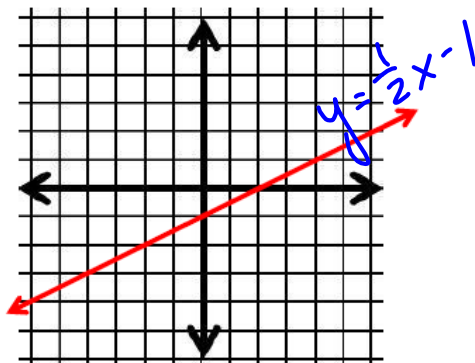*the lines are **parallel**

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example 4:

Solve the following system of linear equations by graphing.

$$\begin{cases} -x + 2y = -2 \rightarrow \quad y = \frac{1}{2}x - 1 \\ 4y = 2x - 4 \rightarrow \quad y = \frac{1}{2}x - 1 \end{cases}$$

INFINITELY MANY SOLUTIONS

*same slope
*same y-intercept
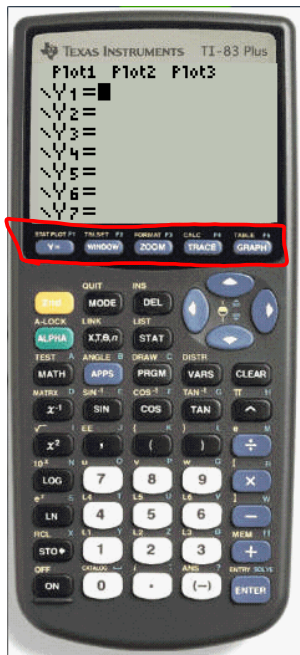*the lines are **exactly the same**
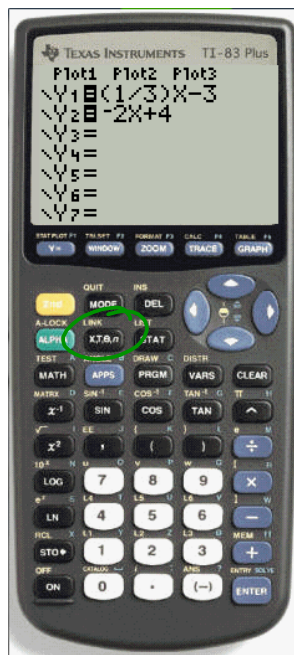
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Systems of Equations Graphically - Day 2

Example 1: Graphing Calculator

Step 1: " Y = "   **Step 2: Type in Equations**
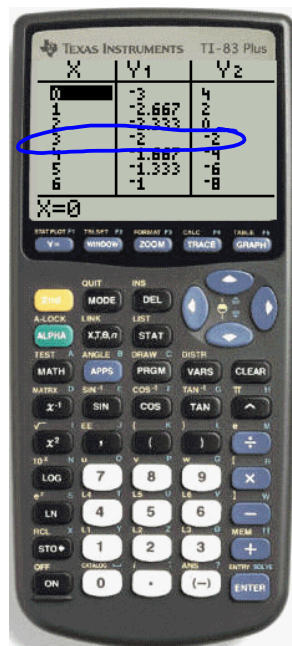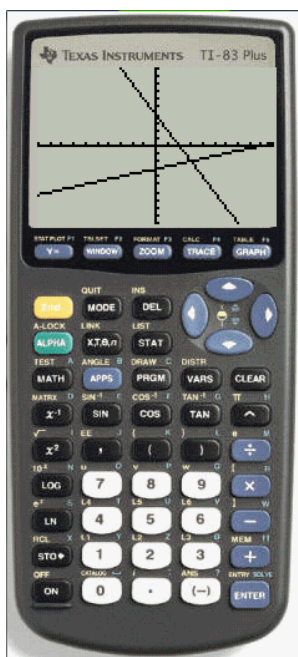
$$y = \frac{1}{3}x - 3$$

$$y = -2x + 4$$

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Systems of Equations Graphically - Day 2

Example 1: Graphing Calculator

Step 3: "GRAPH"   **Step 4: "2nd" then "TABLE/GRAPH"**

$(3, -2)$

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4

Systems of Equations Graphically - Day 2

Example 2: Graphing Calculator

You Try!

$y + 2x = -1$

$y = x + 5$

Reset
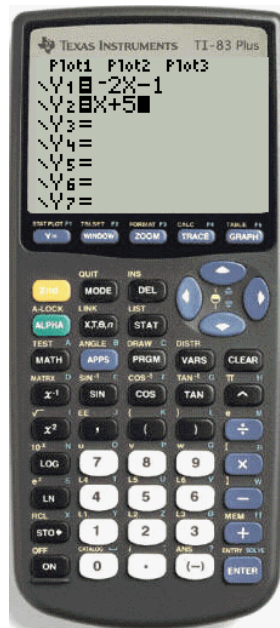
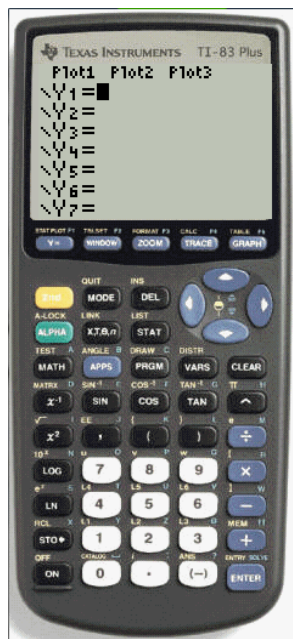*2nd*

+

Option 7

Option 1

Yes

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Systems of Equations Graphically - Day 2

Example 2: Graphing Calculator

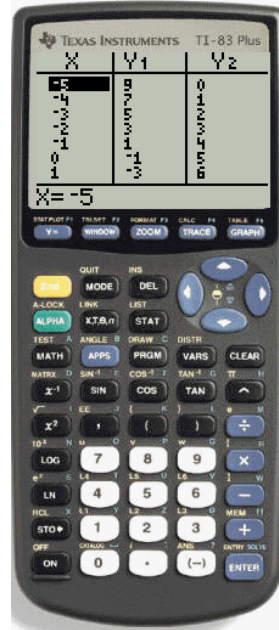Step 1: " Y = "   Step 2: Type in Equations
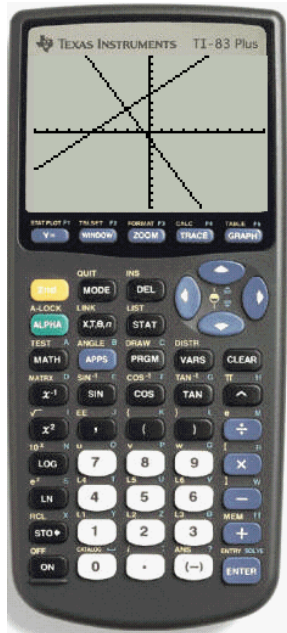
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Systems of Equations Graphically - Day 2

Example 2: Graphing Calculator

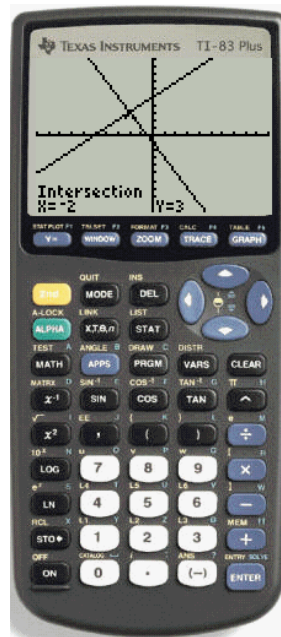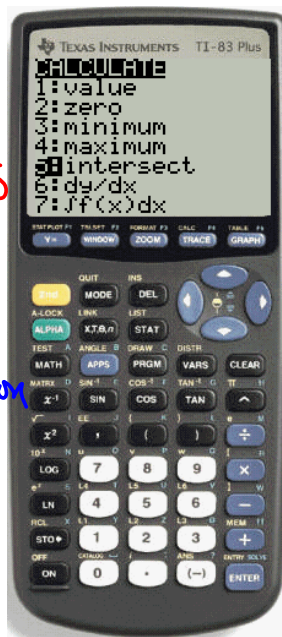Step 3: "GRAPH"   Step 4: "2nd" then "TABLE"

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Systems of Equations Graphically - Day 2

Example 2: Graphing Calculator - Alternate way to find the intercept

2nd
Trace
Option 5
Enter
Move
Arrow to
intersection
Enter
Enter
Enter

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