



## Activity Overview

In this activity, you will create a new document with a Graphs application which contains a system of equations that can be used to illustrate solving a system by graphing.

## Materials

- Technology needed (TI-Nspire™ handheld, computer software)

## Steps

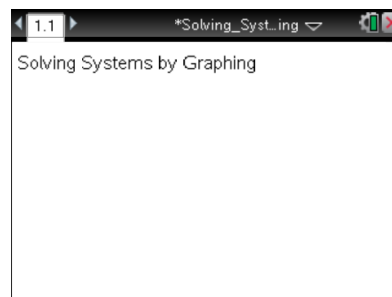
### Step 1: Preparing the title page

- Create a new document: pressing **[on]** > **New Document** > **Add Notes**.
- Type **Solving Systems by Graphing**.

**Note:** To create capital letters, press **[shift]**, then the letter.

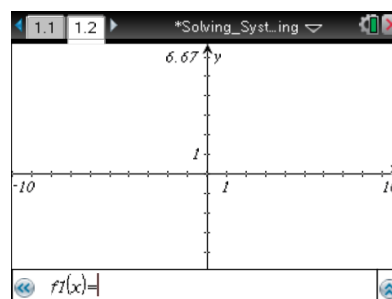
- Press **[doc]** > **File** > **Save As**  
Type: Solving\_Systems\_by\_Graphing.  
Tab to **[save]** and press **[enter]**.

**Note:** To create underscore, press **[ctrl]** **[\_]**.



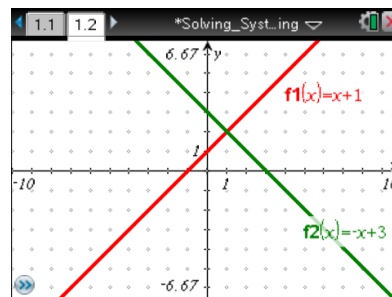
### Step 2: Adding the Graphs application

- Add a graphs application: press **[ctrl]** **[doc]** > **Add Graphs**



### Step 3: Graph two lines

- To graph the line  $y = x + 1$ , press **[X]** **[+]** **[1]** **[enter]**.
- To bring up the  $f2(x)$  entry line, press **[tab]**.
- With the cursor in the  $f2(x) =$  entry line, graph the line  $y = -x + 3$  by pressing **[(-)]** **[X]** **[+]** **[3]** **[enter]**.
- To add a grid, select **Menu** > **View** > **Show Grid**.



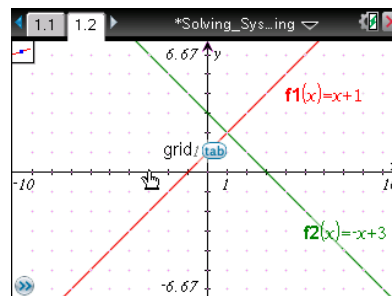


## Creating: Solving Systems by Graphing

### MATH NSPIRED

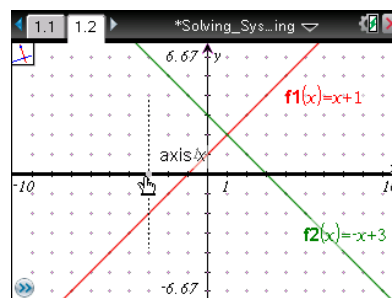
#### Step 4: Create a point that moves

1. To create a point that is on a grid mark and on the x-axis, select **Menu > Points & Lines > Point On**.
2. Move the arrow near a tick mark on the x-axis until you see and “grid .” Press . You will see “axis .
3. Press twice.
4. Press .



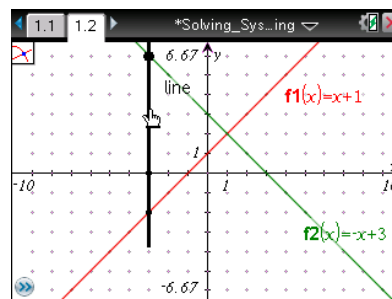
#### Step 5: Create a perpendicular line to the x-axis

1. To make a line through this point that is perpendicular to the x-axis, select **Menu > Geometry > Construction > Perpendicular**.
2. Move the cursor until you see and “point ”. Press . A dotted line will appear.
3. Move the cursor until you see and “axis x”, and the x-axis has become bold. Press . Press .



#### Step 6: Construct two points of intersection

1. To find the intersection points of the vertical line with  $f_1(x)$  and  $f_2(x)$ , select **Menu > Geometry > Points & Lines > Intersection Point(s)**.
2. Move the cursor to anywhere on the graph of  $f_1(x)$  until you see and “graph f1”, and the line for  $f_1$  is bold. Press .
3. Move the cursor to anywhere on the vertical line until you see and “line”. The vertical line will be bold and the point of intersection will appear. Press .
4. Move the cursor to anywhere on the graph of  $f_2(x)$  until you see and “graph f2”, and the line for  $f_2$  is bold. Press .
5. Move the cursor to anywhere on the vertical line until you see and “line”. The vertical line will be bold and the point of intersection will appear. Press Press .



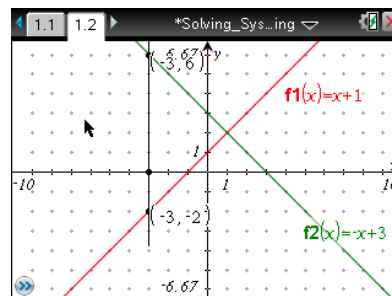


## Creating: Solving Systems by Graphing

### MATH NSPIRED

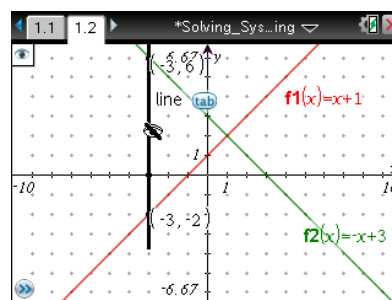
#### Step 7: Display the coordinates

1. To display the coordinates of the points of intersection, select **Menu > Actions > Coordinates and Equations**.
2. Move the cursor to the point of intersection of **f1** and the vertical line until you see and “point **tab**”. The point will become bold and the ordered pair will be displayed faintly. Press **enter** twice.
3. Move the cursor to the point of intersection of **f2** and the vertical line until you see and “point **tab**”. The point will become bold and the ordered pair will be displayed faintly. Press **enter** twice.
4. Press **esc**.



#### Step 7: Hiding the Vertical Line

1. To hide the vertical line from view, press **Menu > Actions > Hide/Show**.
2. Move the cursor to the vertical line until the vertical line becomes bold and you see and “line.”
3. Press . Press **esc**.



#### Step 8: Save the Document

Press **ctrl** **S**.

