



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)

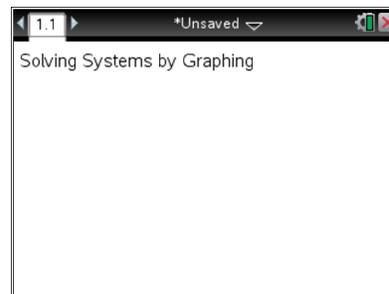
Step 1: Preparing the title page

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

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

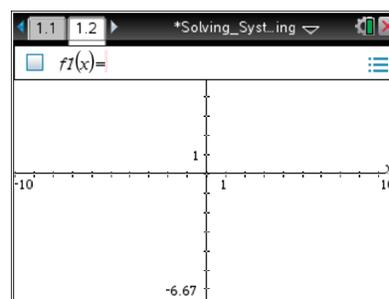
- Press **doc** > **File** > **Save As**
 Type: Solving_Systems_by_Graphing.
 Tab to **save**, and press **enter**.

Note: To create underscore, press **ctrl** **_**.



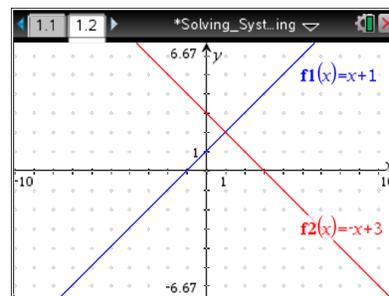
Step 2: Adding the Graphs application

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



Step 3: Graph two lines

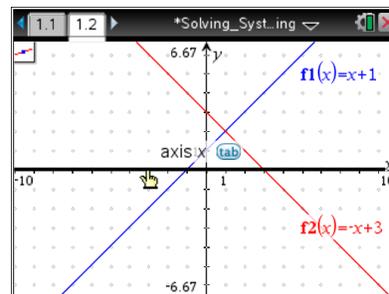
- To graph the line $y = x + 1$, press **X** **+** **1** **enter**.
- To bring up the $f2(x)$ entry line, press **tab**.
- With the cursor in the $f2(x) =$ entry line, graph the line $y = -x + 3$ by pressing **(←)** **X** **+** **3** **enter**.
- To add a dot grid, select **Menu** > **View** > **Grid**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





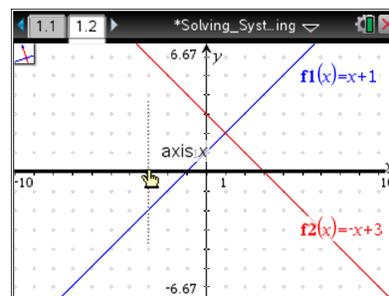
Step 4: Create a point that moves

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



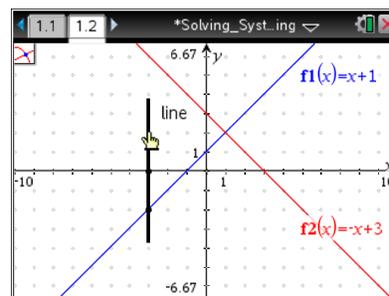
Step 5: Create a perpendicular line to the x-axis

1. To graph 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 **tab**”. Press **enter**. A dotted line will appear.
3. Move the cursor until you see and “axis x”, and the x-axis has become bold. Press **enter**. Press **esc**.



Step 6: Construct two points of intersection

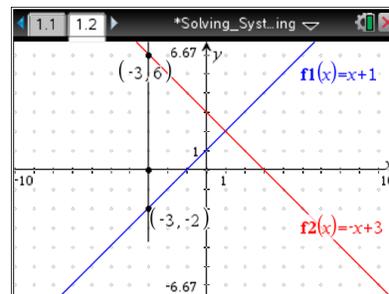
1. To find the intersection points of the vertical line with the graphs of $f_1(x)$ and $f_2(x)$, select **Menu > Geometry > Points & Lines > Intersection Point(s)**.
2. Move the cursor to anywhere on the graph of $f_1(x)$ until you see and “graph f1”, and the line for f_1 is bold. Press **enter**.
3.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





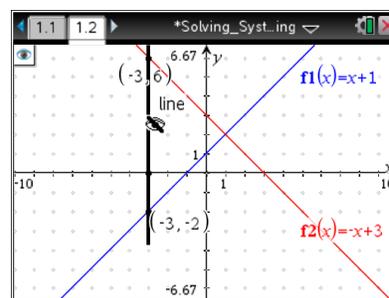
Step 7: Display the coordinates

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**.

