

LESSON PLANS

Equation of a line and Slope of a line

Objectives: To instruct students about the slope of a line and the slope intercept form of a line using the TI-92 and the Geometer's Sketchpad.

IGO's 7.25; 7.26; 8.21; A1.9; A1.10; A1.11; A2.2.

Procedures: For this explanation the capital letters indicate the pull down menu on the tool bar. The words following the capital letters are the items to click on the pull down menu. The following are the settings we want on a new page.

GRAPH Axes On Grid On (or snap to grid)

GRAPH Equation form Slope/Intercept

DISPLAY LabelOptionsAuto/show/labels/for/new/objects

GRAPH Grid Form / Rectangular

-Click on the red point on the left hand menu bar and create two points at $(-1,2)$ and $(1,-1)$. They should both be labeled with a letter. After each point has been placed, go back and click on the red pointer. (This is a good habit to get into every time one is finished with the red tool bar)

-Hold down the shift key and highlight both points, then release the shift key.

-We now need to have the coordinates of the two points so we...

MEASURE Coordinates

-Click and hold down on the red line box on the left hand menu bar and then highlight the last box on the right with two arrows, the line box. The red box should now have a line in it.

CONSTRUCT Line

-Now highlight the line itself by clicking on the line and two squares will appear on the line indicating that the line is highlighted. (Remember to be on the arrow)

MEASURE Slope

MEASURE Equation

-Now we will use the equation for slope $\frac{y_2 - y_1}{x_2 - x_1}$ given two points.

MEASURE Calculate

And a calculator appears. If you click on the first set of coordinates, they will turn black. Once this has happened then click on the left parenthesis "(" then click back on the darkened or highlighted point and a drop down menu will appear and click on the "y". Now hit the minus sign on the calculator and click on the other point and its "y". Close the parenthesis and hit the divide sign on the calculator and open another set of parenthesis. Click again on the top darkened/highlighted coordinate and on the pull down menu click on the "x" then hit the minus sign on the calculator and finally the other "x" and close the parenthesis. It should look something like this $\frac{y_c - y_d}{x_c - x_d}$.

-Making sure that the red arrow is highlighted; drag the lower point one unit to the left. Notice the changes and keep moving one point or the other, then fill in the attached chart.