**Activity 1.2.6b Translating Lines**

1. Recall from Algebra 1: If two lines have the same \_\_\_\_\_\_\_\_\_, then they are parallel.
2. Describe, in your own words, what it means for two lines to be parallel.

3. Open GeoGebra and select the *Algebra & Graphics* view from the *Perspectives* menu.

a. Display the grid by selecting the **Move Tool** and clicking the drop down arrow by *Graphics* as shown below.

b. Select the **Line Tool** (as shown to the below) to place points on the coordinate plane and construct a line by clicking on the points (1,4) and (4,2).



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| Macintosh HD:Users:phubeny:Desktop:Screen Shot 2015-02-07 at 4.05.15 PM.png | To display the label and the coordinates of the points, right click the points then click **Object Properties**to display the*Preferences* dialog box. Select Show Label: Name and Value. |

c. Select the **Vector tool** by clicking the Line tool and selcting vector as shown below. Now click on the origin and click on the coordinate (3,1). After this step, your drawing should look like the one shown on the graph below.





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|  | d. To translate the line using the vector, from the Transform menu select the **Translate Object by Vector** tool, click the line and then click the vector. Notice that a translated line appears after clicking the vector tool.4. What do you notice about the line and its image? 5. Find the slope tool under the Angle menu. Use this tool to find the slope of both lines. What do you notice? |

6. Change the size of the vector by moving point *D.* What do you notice about the line and its image?

7. What would the vector have to be in order to make the original line and its image coincide?

1. Open a new window and create a new line anywhere on the grid. Now, create a vector that is parallel to your line and translate your line by it. What do you notice?