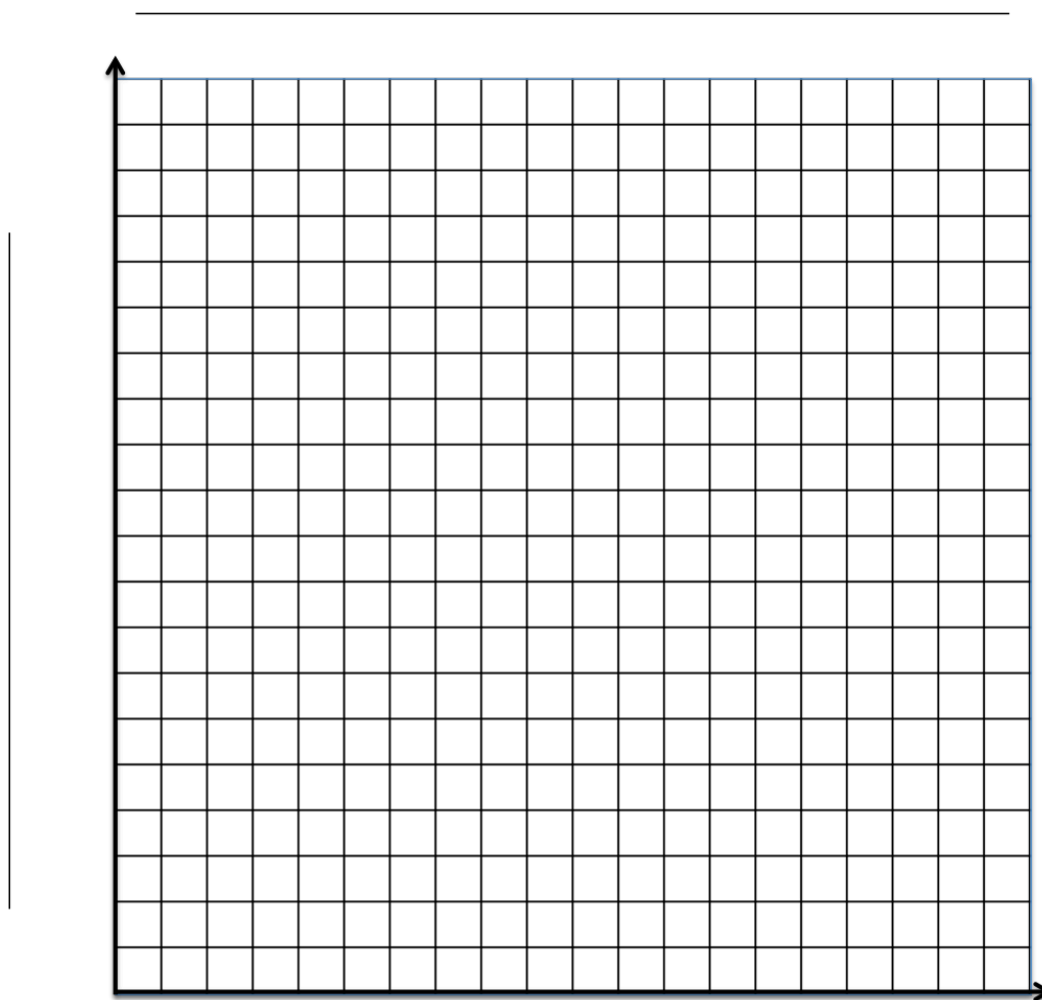


## Topic 7: Graphing and Data Analysis

1. When anhydrous calcium chloride is dissolved in water, the temperature of the system changes. A student obtains the following data when dissolving increasing amounts of  $\text{CaCl}_2$  into 100 mL of water:

Mass of $\text{CaCl}_2$ dissolved, g	0.91	2.94	5.92	8.81	10.89
$\Delta T$ , $^{\circ}\text{C}$	1.8	6.6	12.8	18.9	23.2

Plot the data on the graph below. Choose an appropriate scale, and label the axes appropriately.



Refer to the graph to answer the following questions.

Independent Variable: \_\_\_\_\_

Dependent Variable: \_\_\_\_\_

Provide a descriptive title for the graph: \_\_\_\_\_

2. Describe the relationship between grams of calcium chloride salt and change in temperature in a sentence.

3. Draw a line of best fit. Determine its slope, including units.

4. Predict the change in temperature when

a. 4.33 g of  $\text{CaCl}_2$  are dissolved

b. 9.56 g of  $\text{CaCl}_2$  are dissolved

c. 15.4 g of  $\text{CaCl}_2$  are dissolved

5. Predict what mass of  $\text{CaCl}_2$  will result in

d. a  $12.4^\circ\text{C}$  change in temperature

e. a  $44.9^\circ\text{C}$  change in temperature