

**Purpose:** Determining the number of moles in a syringe from pressure and volume data.

**Data:** This will be a table of ONLY is measurements you took (volume and pressure)

Room Temperature (K): _____	Volume (m <sup>3</sup> )	Pressure (Pa)
Air Pressure in Chicago (Pa): _____		

**Calculations:** This is where the majority of the work will be

New table with calculated columns. YOU MUST SHOW CALCUATIONS WERE MADE AND EQUATION USED!!!!!!

Volume (m <sup>3</sup> )	Pressure (Pa)	STRAIGHTNED COLUMN

Graph the following:

- 1) Pressure (y) vs. Volume (x)
- 2) Straightened Graph...you will calculate the slope and determine the y-intercept of the line (y-intercept will be negative so make sure your graph includes the y-intercept)

Calculate the following from your straightened graph

- 1) Using your slope, calculate the number of moles of AIR in the syringe.
- 2) Determine the air pressure in the room from the y-intercept.

**Conclusion:**

- 1) Error analysis
- 2) Discuss the meaning of the slope...what does it represent (DON'T SAY HOW STEEP IT IS) think in terms of the equation
- 3) Discuss the meaning of the y-intercept

**Extra questions:**

- 1) Design an experiment that would show the relationship between TEMPERATURE and PRESSURE. Please include the equipment used to measure the variables. For example, if your variable was TIME, the equipment used to measure would be a stopwatch. Also, state any variables that would need to remain constant in the experiment. Lastly

Variable	Equipment used to measure	Constant(s)
TEMPERATURE		
PRESSURE		
Describe Experiment:		