Group Name:

Determination of Absolute Zero using Gay-Lussac's Law Worksheet

LibreTexts page: 8: Gases

(https://chem.libretexts.org/link?214685)

Please don't edit, rearrange or delete anything that is already in this document. Just add your answers inside the boxes.
You can use shortcuts for superscripts and subscripts when needed:

X^2	Superscript	Ctrl+.
X_2	Subscript	Ctrl+,

Part I: Data

Use this Google Sheet [Insert link] to obtain the data. Pay attention to the units.

Type of bath used	Temperature, °C	Pressure, kPa	Pressure, atm

Part II: Graphing

1. Create a new Google Sheet and plot the data points above. Pressure is the dependent variable.

2. Go to Edit Graph → Customize → Vertical axis → Set minimum value to -0.1

3. Set the minimum value of the x-axis so that you can observe the trendline cross through the x-axis, this is called the x-intercept, which is the value of the temperature when the pressure equals zero.

4. Insert a snapshot of your graph below. Don't forget to add titles, units, equation, trendline and minor gridlines.

5. What is the value of absolute zero from the graph?

Part III: Calculations

1. Using the slope calculate the value of x when y=0, this is the x-intercept.

2. Calculate present error using the formula below.

$$\% \text{ Error} = \left| \frac{\text{Theoretical Value} - \text{Experimental Value}}{\text{Theoretical Value}} \right| \times 100$$