PHYS LAB Spreadsheet & Graphing

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    Day/Time:\_\_\_\_\_\_\_

Partner(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B3. Make a scatter plot: Tf versus Tc: Tf on Y-axis and Tc on X-axis, and obtain the temperature conversion equation from the data fit.

Trendline equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Temperature conversion equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B5. Now you will make another scatter plot: Tc versus Tf: Tc on Y-axis and Tf on X-axis, and obtain the temperature conversion equation from the data fit.

Trendline equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Temperature conversion equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*C1.* **F = kz + F0**.

Plot the above data points to obtain a linear scatter plot and determine k and F0 from the Trendline equation. Include units for k and F0.

Given equation: **F = kz + F0**.

Trendline equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

k = \_\_\_\_\_\_\_\_\_\_\_\_\_\_            F0 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C2. The distance, s as a function of time, t is given below, where *a* and *b* are constants.

                           **s = a t2 + b**

Trendline equation (s versus t):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*a* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    *b* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Trendline equation (s versus t2):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*a* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    *b* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C3. The emf, e in millivolt, of a thermocouple operating between a bath at temperature T and an ice water standard is given by;
   e = AT + BT2, where A and B are constants.

Trendline equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A = \_\_\_\_\_\_\_\_\_\_\_\_\_\_            B = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C4. The period, T as a function of mass, m is given by the following equation; where k is a constant.



Trendline equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Coefficient of the power fit = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Equating the coefficient of the power fit, calculate the value of k. (include unit).

k = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make a linear scatter plot, and determine the slope, and then determine the constant k including unit. Insert your graph in the digital copy.

Slope = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    k = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D.

Trendline equation =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acceleration = a = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_