

The Science of Acoustics – McCaskey

Assignment #2

Due next week at the **beginning** of class. Please write out or type your answers, and hand them in then. No homework will be accepted after solutions are posted.

1. Your main task is to write the lab report as instructed. For this problem, you should have a graph of T^2 on the y-axis and mass (in **kg**) on the x-axis of a chart. Use the trendline feature shown in class (with equation) to find the slope of this line, or find the slope by calculating (rise / run). What are the *units* of this slope? I've posted on Canvas (under the lab assignment) a document that shows how to do graphs in Excel or Numbers.
2. Here's a homework question where you use what we did in lab. If $T = 2\pi\sqrt{\frac{m}{k}}$ and we square everything, $T^2 = \frac{4\pi^2}{k}m$. If you graph things like I told you in problem 1, the slope of the line you got will be equal to $\frac{4\pi^2}{k}$ (and $\pi = 3.1416$, approximately). Use the slope you got for your group's data to find the k (spring constant) for your spring.

Now that you've finished that, complete from the Chapter 2 course notes HW problems #2, 3, 4, 5, 8, and 9a+b.