Weekly Journal 6

Introduction

In your Weekly Journals, you will reflect on various aspects of the work you are doing, and how things are going overall. The goal of these Weekly Journals is to encourage you to take an active role in your own learning: you'll be prompted to consider what you are doing and how it is and isn't working. The Weekly Journals will be graded based on whether you have put a good-faith effort in. If you do not have time to attempt a portion of the work needed to do a journal, you should just say so: you will not lose credit. Please do not make things up, pretend to have completed work you have not done, or copy work from outside sources: this just wastes everyone's time. This is my first time using the Weekly Journals, so it is likely that they will evolve as I discover what is working and what isn't. It is my hope that these journals will help you develop more effective, efficient, and interesting ways of learning physics!

Completing a Weekly Journal

Each Weekly Journal will be submitted as a pdf file via Gradescope, accessed via the Weekly Journal Canvas assignment. In Gradescope, you will be presented with a pdf file (like this one!) with a series of questions. Some of the questions will be related to tasks you have been doing for class such as reading, lecture viewing, and Mastering Physics homework. You should answer these questions either on paper or in an electronic document.

The pdf file will also contain a sample test question or questions, to be attempted after all the other work is done. You should attempt the sample test question(s) in a test-like environment: do not consult the textbook or other outside resources. However, you should feel free to consult the course equation sheet for needed equations.

After you have completed the sample test question(s), download the solutions so you can evaluate your work, and answer the questions as you are prompted to do so.

Once you have answered all the questions, convert your answers, including a picture of your sample test answer, to pdf files. Finally, combine your pdf files for the Weekly Journal questions and the sample test question(s) (there are many apps that can do this) and submit your work to Gradescope.

Work for this Weekly Journal

In order to complete this Weekly Journal, you must first complete the following assignments.

- Watch the videos assigned prior to class this week (and last week).
- Do the reading assigned prior to class this week (and last wee).
- Do Mastering Physics HW6
- Complete the sample test problem described below, but only after you have completed the above.

Preliminary Questions

1. List at least one question you had about this week's lectures. This could be a point of confusion, or something you are curious about.

2. List at least one question you had about this week's reading. This could be a point of confusion, or something you are curious about.
3. Which Mastering Physics problem (or problems) was hardest for you? What step, specifically, gave you trouble?

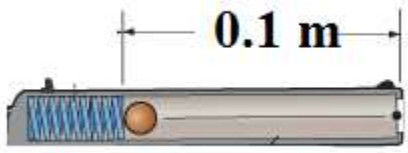
Sample Test Problem

Once you have completed the other work for the week, in a test-like setting, attempt to answer the questions below. This is intended as practice for the actual test- so prepare for it as you might for the actual test! You may use the course equation sheet as you complete the problem. Unlike a real test though, there will be no time pressure: take your time to create complete solutions with diagrams, neatly organized work, and explanations: your goal should be something like you see in the book example problems. Do NOT look at the solution ahead of time: remember, you will be graded on the quality of your reflection, not on the correctness of your work.

Problem:

I highly suggest learning the steps in the Conservation of Energy Problem Solving Guide before doing this problem.

A spring of a spring gun with spring constant of 100 N/m is compressed a distance of 0.1 m from its relaxed state. A ball of mass 0.5 kg is put in the barrel. After the trigger is fired, the spring pushes the ball down the barrel, although as it does so, there is a constant 1 N frictional force opposing the motion of the ball. With what speed will the ball leave the barrel?



Sample Test Problem Review

Once you have completed the sample test problem, download the solution from Files/Weekly Journal, and answer the questions below. If you didn't get far enough in your solution to answer one of the questions below, just say so.

For each question below, if the answer is "no", explain briefly why you might have made a mistake/missed this step. If you make a mistake in an early stage in the problem, for the later parts, assess whether your method was correct, rather than whether you got the correct answer.

4.

a. When you upload your work to GradeScope, indicate the page(s) in your document where you completed this problem.
b. Did you clearly draw, in a diagram or diagrams, the initial and final moments in time?
c. Did you draw an FBD?
d. Did you note that the normal force and weight did no work?
e. Did you note that the spring force was conservative, so we use potential energy to account for it?
f. Did you find the proper expression for the work done by kinetic friction?
g. Did you write out the energy conservation equation properly?
h. Were you able to solve for the correct answer?