

PHYS 1401 General Physics I
Homework #6

For the first three questions, express your final answer in the form of a *complete sentence*, with the correct units and number of significant figures. Do not just circle a number. Show all calculations, and draw diagrams where appropriate. The last six questions are found on the [Mastering Physics](#) site, and are worth a point each.

It would be a good idea to try the Tutorials before tackling the homework problems. If you complete the entire Tutorial for Homework #6, you will get 1 bonus point. If you complete any part of the Tutorial, you will get half a bonus point.

Do these problems on paper and turn them in

1. (1 point) Chapter 6, Problem 4, p. 175 – Before solving parts (a) and (b) of this problem, first find the coefficient of friction necessary to keep the car on the road.
2. (1 point) Chapter 9, Problem 18, p. 280
3. (2 points) Consider the situation in Chapter 10, Problem 9, p. 317
 - a. What is the angular acceleration of the grindstone as it comes to a stop?
 - b. What is the moment of inertia of the grindstone?
 - c. What force is bringing the grindstone to a stop? What is the net torque caused by that force?
 - d. What is the size of the force?
 - e. What is the coefficient of friction between the axe and the grindstone?

These are the problems from the book that are online. The data are different, so you can work them out without numbers and then go online.

1. Chapter 9, Problem 14, p. 280
2. Chapter 9, problem 56, p. 283
3. Chapter 9, problem 60, p. 283
4. Chapter 10, Problem 3, p. 317
5. Chapter 10, Problem 10, p. 318
6. Chapter 10, Problem 13, p. 318