

PHYS 1401 General Physics I
Homework #3

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 #3, 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 4, Problem 8, p. 117
2. (1.5 points) A man wants to move a heavy wooden crate (82 kg) across a wooden floor (coefficient of kinetic friction = 0.38). However, since he is taller than the crate, he must pull it using a rope that makes an angle of 42 degrees with the horizontal. He exerts a force of 312 N as he pulls.
 - a. What is the Normal Force exerted by the floor on the crate?
 - b. What is the size of the Friction Force felt by the crate?
 - c. What is the crate's acceleration?
3. (1.5 points) Chapter 4, Problem 42, p. 118

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 4, Problem 7, p. 117
2. Chapter 4, Problem 11, p. 117
3. Chapter 4, Problem 13, p. 117
4. Chapter 4, Problem 36, p. 118
5. Chapter 4, problem 40, p. 118
6. Chapter 4, Problem 46, p. 119