

Problem Set #3

Physics 302

Tuesday, 06 February 2024

The following problems come from *Vibrations and Waves* (1971), by AP French.

- Problem 3-3 on page 70 \Rightarrow (15 points) Write Newton's second law for the block in contact with the platform. Think about what happens in that equation at the moment when the block loses contact with the platform.
- Problem 3-4 on page 70 \Rightarrow (10 points) Review Archimedes' principle. Examine the cylinder both in equilibrium and displaced from equilibrium.
- Problem 3-5 on page 70 \Rightarrow (10 points) Think carefully about what all the symbols mean in equation (3-15) on page 53.
- Problem 3-8 on page 71 \Rightarrow (10 points) You calculate some numbers here. In fact, try out the problem if you can find some steel wire.
- Problem 3-9 on page 71 \Rightarrow (10 points) You will need to look up the density of steel.

Due date: **Thursday, 15 February 2024** (*beginning of class*)