Physics 327—Advanced Classical Mechanics
Problem Set #8
Due Wednesday, April 17, 2024, 2:45 p.m.

All problems are due at the *beginning* of class on Wednesday.

Text Problems

Ch. 10: 12.6, 12.8, 12.14, and 12.16.

Supplemental Problems

S1: A rectangular drum has dimensions 20 cm $\times$ 30 cm. If the lowest normal mode of vibration has frequency f of 110 Hz, what are the next 3 lowest frequencies of the drum?

S2: A circular drum has radius 14 cm. (This radius is chosen so that the area is similar to that of the rectangular drum in the previous problem.) If the lowest normal mode of vibration has frequency f of 110 Hz, what are the next 3 lowest frequencies of the drum?

Academic Honesty

You may use, without proof, any results from class or from your text by simply quoting the result and giving the reference (*e.g.* equation number or page number). You should understand *how* that result was obtained, but you need not transcribe the derivation.

If you get bogged down with any of the problems, do not hesitate to discuss them with me or with a fellow student. However, if you discuss a problem with *anyone* (besides me) you should acknowledge that collaboration.