

## HIP 06

### COMMENTS:

- Problem 1 is a list of suggested Student Workbook Volume 1 problems to practice in your spare time. You do not need to turn these in, they will not be graded. I recommend working through these before attempting problem 2, or if you get stuck while working on problem 2.
- Problem 2 will be graded based off of the HIP rubric.

(1) CH 14: 14, 15, 16, 17

CH15: 3, 4, 6, 7, 8, 9, 12, 13, 16, 17, 18, 19, 20

(2) A spider has a mass 0.70 g and is hanging from rest on a 20-cm-long thread of 0.0020-mm-diameter silk. Spider silk's density is  $1290 \text{ kg/m}^3$ .

- a. If the small child holding the other end of the silk moves their end of the silk, how long will it take for the spider to feel it?
- b. If the string is whirled in a vertical circle at a rate of 2 revolutions per second, what is the minimum and maximum time for vibrational information from one side of the silk to reach the other?