

Problem Set #6

Physics 302

Thursday, 07 March 2024

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

- Problem 4-8 on page 114 \Rightarrow (20 points) Part (a) is *very* short; there is a simple integral to evaluate. Follow the same solution procedure for part (b) that we did in class for the full problem. Part (c) has you combining the transient solution with the steady-state solution. Make a nice *Mathematica* plot of the part (c) result. Plot the solution over enough time that you can see the transients die away, leaving only the steady-state solution.
- Problem 4-11 on pages 114-115 \Rightarrow (10 points) You compute some numbers in this problem. Please give all of your answers to at least *three* significant digits.
- Problem 4-13 on page 115 \Rightarrow (10 points) A power resonance graph is used to determine properties of an oscillating system.
- Problem 4-17 on pages 116-117 \Rightarrow (15 points) A power resonance curve is used to determine energetic properties of an oscillating system.

Due date: **Thursday, 21 March 2024** (*beginning of class*)