

The goal of this assignment is to explore damped and undamped oscillations.

1. Give an example of an initial value problem that
 - (a) is overdamped,
 - (b) is critically damped,
 - (c) is underdamped,
 - (d) demonstrates resonance.
2. For each of the example initial value problems, solve the initial value problem numerically or by hand, and plot the solution. Explain the qualitative difference between the difference observed phenomena.