
Math 333
Homework 8
Forced Harmonic Oscillators

Note: This homework is due in class on Tuesday, April 1, 2008.

1. Consider the differential equation

$$y'' + 4y' + 20y = 3 + 2 \cos(2t).$$

- (a) Find the general solution of the differential equation.
- (b) Discuss the long-term behavior of solutions of the equation.

2. Consider the differential equation

$$y'' + 6y' + 8y = -4 \cos(3t).$$

- (a) Find the general solution of the differential equation.
- (b) Discuss the long-term behavior of solutions of the equation.

3. Consider the differential equation

$$y'' + 2y' + y = 2 \cos(2t).$$

- (a) Find the general solution of the differential equation.
- (b) Discuss the long-term behavior of solutions of the equation.