

## Math 302 Vocabulary

### Section 4.1

1. Give an example of a second-order, linear, constant-coefficient, nonhomogeneous, nonautonomous differential equation.
2. For the example in part (1), what is the associated homogeneous differential equation.
3. State the Extended Linearity Principle in your own words.
4. To find a particular solution to the nonhomogeneous DE in part (1), what should your first guess be? If that doesn't work, what should your second guess be? Third guess?

### Section 4.2

1. To find one solution of the forced equation

$$\frac{d^2y}{dt^2} + 2\frac{dy}{dt} + 2y = \cos 2t,$$

what should you guess as a particular solution?