

Quiz 5
You have 30 minutes

Name:
Banner#:

1. (a) Find the general solution to the ODE

$$y'' - 4y' + 5y = 0$$

- (b) Find the general solution to the ODE

$$y'' - 4y' + 5y = e^{2x}.$$

2. Use the method of variation of parameters to find a particular solution to the ODE

$$y'' + y = \frac{1}{\sin(x)}.$$

3. Consider the initial value problem

$$y'' + xy = 0, \quad y(0) = 1, \quad y'(0) = 0.$$

Find a series solution of the form

$$y = a_0 + a_1x + a_2x^2 + a_3x^3 + \dots$$

Determine the values of a_0, a_1, a_2 and a_3 .