

Name: \_\_\_\_\_

1. [3 points] Solve the IVP  $4y'' + 12y' + 9y = 0$  with  $y(0) = 1$  and  $y'(0) = 2$ .

2. [3 points] Find the general solution to  $y^{(4)} + 8y^{(3)} + 17y^{(2)} = 0$ .

3. [3 points] Find the general solution to  $y'' + 2y' + 5y = \sin t$ .

4. [1 point] Given that  $y_1$  is a solution to  $y'' + p(t)y' + q(t)y = 0$ , the reduction of order procedure looks for additional solutions of the form  $y = \underline{\hspace{2cm}}$ .