

Name [1 Pt]: \_\_\_\_\_ Quiz Score: \_\_\_\_\_/(4+1)

Answer all questions. Show all work, and carefully explain your reasoning.

- 2 1. Given that  $-1$  and  $4$  are the roots of the characteristic equation, find the general solution of the ODE

$$y'' - 3y' - 4y = 2 \sin(t) + 4$$

**Solution:**

- 2 2. Given that  $1$  is a double root of the characteristic equation, find the general solution of the ODE

$$y'' - 2y' + y = te^t$$

**Solution:**