**Math 274 Quiz 4** **Name:** _____

Sections: 4.1, 4.3 Point values in boxes.

15 February 2019

1. For $t > 0$, show that $y_1 = t^4$ and $y_2 = t^2$ form a fundamental solution set for

$$t^2y'' - 5ty' + 8y = 0. \tag{1}$$

We will do so as follows.

(a) [2] Show $y_1$ and $y_2$ are solutions of (1).

(b) [2] Use the Wronskian to show $y_1$ and $y_2$ are linearly independent.

2. [3] Find a general solution for each of the following.

(a) $4y'' + 8y' + 3y = 0$

(b) $x'' + 4x' + 4x = 0$

3. [3] Find the solution to the initial value problem

$$y'' + 5y' + 6y = 0, \quad y(0) = 3, y'(0) = 0.$$