Name: _____ **Sort #:** _____

Worksheet 9: Repeated Roots & Reduction of Order

MATH 2310, Spring 2019 Grade: / 20

1. (10 pts) Find the solution of the initial value problem

$$9y'' - 12y' + 4y = 0, \quad y(0) = 2, \quad y'(0) = -1$$

2. (10 pts) Use the method of reduction of order to find a second solution of the initial value problem

$$ty'' - y' + 4t^3 y = 0, \quad t > 0, \quad y_1(t) = \sin(t^2)$$