
Math 221 Quiz 5

Name:_____

Score:_____

Instructions: You must show supporting work to receive full and partial credits. No text book, notes, formula sheets allowed.

- 1(5pts) (a) Verify that $y_p(t) = -t^2$ is a particular solution to the nonhomogeneous equation $ty'' - (t+1)y' + y = t^2$.
(b) Find a general solution to the equation if it is given that $y_1(t) = e^t$, $y_2(t) = (t+1)$ are two linearly independent solutions to the homogeneous equation.

- 2(5pts) (a) Find the general solution to the homogeneous equation $2y'' + y' = 0$.
(b) Find the solution that satisfies the initial conditions: $y(0) = 3$, $y'(0) = 0$.