Math 10B with Professor Stankova
Quiz 11; Tuesday, 4/10/2018
Section #211; Time: 11 AM
GSI name: Roy Zhao **Name:** _____

Circle True or False or leave blank. (1 point for correct answer, -1 for incorrect answer, 0 if left blank)

1. True False It is possible for a BVP to have exactly 2 solutions.

2. True False If y_1, y_2 are two solutions to a linear homogeneous differential equation, then $y_1 + y_2$ is.

Show your work and justify your answers. Please circle or box your final answer.

3. (10 points) (a) (5 points) Find the general solution to $y'' + 2y' + 2y = 0$.

(b) (4 points) Give an IVP involving a second order differential equation such that $y(t) = e^{2t} + e^t$ is a solution.

(c) (1 point) Prove that $\tan(\theta) = \dfrac{1}{i} \cdot \dfrac{e^{i\theta} - e^{-i\theta}}{e^{i\theta} + e^{-i\theta}}$.