MAT2705-005 Quiz2 Print Name (Last, First) _____ /10

Label and clearly separate each part of each problem, boxing any final results requested if appropriate. Organize your presentation so that it speaks for itself.

$$y' + 2y = 5e^{-3t}, \quad y(0) = 0$$

5 a) Find the general solution using the linear solution algorithm.

2 b) Find the particular solution which satisfies the initial condition.

1 c) Show that your particular solution satisfies the differential equation.

1 d) Find the value t_{max} at which y is a maximum.

1 e) Evaluate $y_{max} = y(t_{max})$ and simplify to a rational number or at least a decimal approximation.

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