

Math 240 - Quiz 11

April 27, 2023

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Use convolution to determine the inverse transform of $Y(s) = \frac{2}{s(s-1)}$.

2. (3 points) Use the derivative-of-transform theorem to compute the Laplace transform of $f(t) = t^2 e^{5t}$. Use your table to check that your answer is correct.

3. (4 points) Use Laplace transforms to transform the 2nd-order equation for $x(t)$ into a 1st-order equation for $X(s)$. Do not solve.

$$tx'' - x' + tx = 0, \quad x(0) = 0$$