

QUIZ 8 - MATH 310

Thursday, April 3

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [6 points] Compute from scratch the Laplace transform of the function

$$f(t) = d_{\tau}(t - 3)e^{7t}.$$

Use the preceding answer to calculate the Laplace transform of $g(t) = \delta(t - 3)e^{7t}$.

2. [6 points] Solve the initial value problem

$$y'' + 6y' + 13y = 3\delta(t - \pi) + 3\delta(t - 2\pi), \quad y(0) = 0, \quad y'(0) = 0.$$