

Spring 2021 Math 20D Lecture B Homework #7
Due Sunday, 11:59pm, May 23th

Submit this homework through Gradescope.

Topics covered: section 7.9, 8.2

1. Find the solution of the given initial value problem:

$$y'' + 2y' + 2y = \delta(t - \pi), \quad y(0) = 1, \quad y'(0) = 0.$$

2. Find the solution of the given initial value problem:

$$y'' + 4y = \delta(t - \pi) - \delta(t - 2\pi), \quad y(0) = 0, \quad y'(0) = 0.$$

3. Determine the radius of convergence of the given power series:

$$\sum_{n=1}^{\infty} \frac{(2x + 1)^n}{n^2}.$$