

MAT 21B, Winter 2023
Homework 6

Due before 2:00pm on Wednesday, March 8

Please write the homework solutions in connected sentences and explain your work. Mark the answers to each question. Scan or take pictures of your homework and upload it to Gradescope before due time.

Compute the following integrals:

1.

$$\int_0^1 \frac{dx}{\sqrt{x}}$$

2.

$$\int_0^{\infty} xe^{-x^2} dx$$

Use Comparison Test or Limit Comparison Test to determine if the integrals converge or diverge (you do not need to compute the integrals):

3.

$$\int_1^{\infty} \frac{dx}{\sqrt{x^6 + 1}}$$

4.

$$\int_1^{\infty} \frac{x^2 + 3x + 1}{x^4 + 7x^2 + 5} dx$$