

Name: _____

MATH 2300 - Quiz 5

Instructions: You may not use your calculator, book, or notes. You may not work with anyone else on the quiz. You are encouraged to ask me a question if you are confused about something.

1. Calculate the following integral if it converges. If it diverges, prove that it diverges.

$$\int_0^{\infty} x e^{-x} dx$$

2. Calculate the following integral if it converges. If it diverges, prove that it diverges.

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

3. Use an appropriate comparison to show that the following integral converges:

$$\int_0^1 \frac{1}{\sqrt{x+3}} dx$$