

Name _____

(circle your TA discussion section)

- | | |
|--|--|
| ▷ AD1 , TR 11:00-12:50, Mina Nahvi | ▷ ADJ , TR 9:00-9:50, Robert "Bob" Krueger |
| ▷ AD2 , TR 9:00-10:50, Adriana Morales | ▷ ADK , TR 10:00-10:50, Sarah Simpson |
| ▷ AD3 , TR 1:00-2:50, Vincent Villalobos | ▷ ADL , TR 11:00-11:50, Rocco Davino |
| ▷ AD@ , TR 9:00-9:50, Phuong "Sophie" Le | ▷ ADM , TR 12:00-12:50, Dara Zirlin |
| ▷ ADA , TR 8:00-8:50, Scott Harman | ▷ ADN , TR 1:00-1:50, John "Connor" Grady |
| ▷ ADB , TR 9:00-9:50, Lutian Zhao | ▷ ADO , TR 2:00-2:50, Shuyu "Sonya" Xiao |
| ▷ ADC , TR 10:00-10:50, Lutian Zhao | ▷ ADQ , TR 10:00-10:50, Saaber Pourmotabbed |
| ▷ ADD , TR 11:00-11:50, Dara Zirlin | ▷ ADR , TR 9:00-9:50, Scott Harman |
| ▷ ADE , TR 12:00-12:50, David Altizio | ▷ ADS , TR 12:00-12:50, Rocco Davino |
| ▷ ADF , TR 1:00-1:50, Saaber Pourmotabbed | ▷ ADT , TR 2:00-2:50, Ryan McConnell |
| ▷ ADG , TR 2:00-2:50, John "Connor" Grady | ▷ ADU , TR 3:00-3:50, Shuyu "Sonya" Xiao |
| ▷ ADH , TR 3:00-3:50, Sarah Simpson | ▷ ADW , TR 8:00-8:50, Robert "Bob" Krueger |
| ▷ ADI , TR 4:00-4:50, Ryan McConnell | |

- You may lose points if you do not circle your correct discussion section.
- You may work with other MATH 220 students. However each student should write their solutions separately and independently – nobody should copy someone else's work.
- You may use your notes, the textbook, or information found on my course home page including old test and quiz solutions.
- You are not allowed to use a calculator, Wolfram Alpha, or any similar technology.
- There is a higher expectation for the quality of your work on a take-home quiz. Everything should be written logically and legibly with sufficient work to justify each answer. Blank copies of the quiz are available on the course home page.
- Be sure that the pages are nicely stapled – do not just fold the corners.
- **The quiz is due at the beginning of your lecture period on Friday, October 18th.**
- **TAs and Tutors – Do not help students with these specific problems until the quizzes have been collected for all MATH 220 lectures (10-10:50am, 1-1:50pm, 3-3:50pm).**

1. (3 points) Evaluate the following limit.

$$\lim_{x \rightarrow \infty} (2x^{-5} + 1)^{4x^5}$$

2. (3 points) Find each interval on which f is increasing and each interval on which f is decreasing.

$$f(x) = 12 \arctan(5x) - 6 \ln(25x^2 + 1)$$

3. (4 points) For each $x > 0$, a triangle is formed with vertices $(0, 0)$, $(x, 0)$ and $(x, f(x))$ where $f(x)$ is the function given below. What is the value of x which results in the triangle of largest area?

$$f(x) = \frac{200}{x^2 + 4x + 25}$$