

Name _____

(circle your TA discussion section)

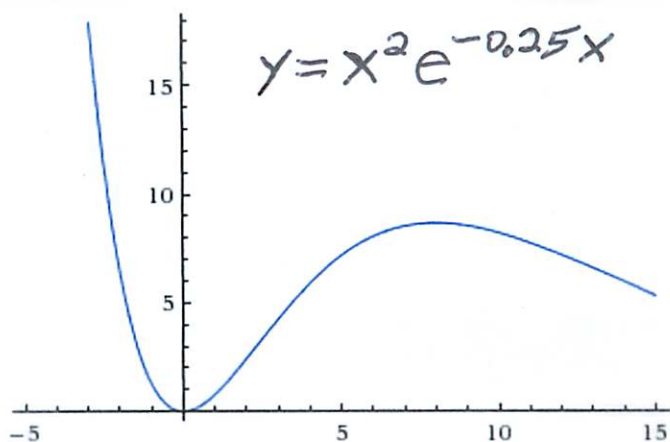
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| ▷ AD1 , TR 11:00-12:50, Melinda Lanius | ▷ ADJ , TR 9:00-9:50, Vanessa Rivera-Quiñones |
| ▷ AD2 , TR 9:00-10:50, Ben Fulan | ▷ ADK , TR 10:00-10:50, Vanessa Rivera-Quiñones |
| ▷ AD3 , TR 1:00-2:50, Mychael Sanchez | ▷ ADL , TR 11:00-11:50, David Poole |
| ▷ ADA , TR 8:00-8:50, Derek Jung | ▷ ADM , TR 12:00-12:50, Iftikhar Ahmed |
| ▷ ADB , TR 9:00-9:50, Derek Jung | ▷ ADN , TR 1:00-1:50, Kaiwen Liu |
| ▷ ADC , TR 10:00-10:50, Andrew McConvey | ▷ ADO , TR 2:00-2:50, Hannah Burson |
| ▷ ADD , TR 11:00-11:50, Andrew McConvey | ▷ ADP , TR 3:00-3:50, Hannah Burson |
| ▷ ADE , TR 12:00-12:50, David Poole | ▷ ADR , TR 9:00-9:50, Stephen Berning |
| ▷ ADF , TR 1:00-1:50, Alonza Terry | ▷ ADS , TR 12:00-12:50, Sarah Mousley |
| ▷ ADG , TR 2:00-2:50, Alonza Terry | ▷ ADT , TR 2:00-2:50, Kaiwen Liu |
| ▷ ADH , TR 3:00-3:50, Argen West | ▷ ADU , TR 3:00-3:50, Iftikhar Ahmed |
| ▷ ADI , TR 4:00-4:50, Argen West | |

- You may work with other MATH 220 students. However each student should write up 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.
- You may use a calculator only for basic arithmetic. In particular you should not use its graphing features.
- You are not allowed to search the Internet, use Wolfram Alpha, or use technology for anything beyond what is stated above.
- 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 official lecture period on Friday, October 17.**
- **Note to TAs and Tutors – you should not help students with these specific problems or go over solutions until after 5pm Friday.**

1. (2 points) Evaluate $\lim_{x \rightarrow \infty} \left(1 + \frac{2}{3x^2}\right)^{6x^2}$

2. (3 points) For each $x > 0$, let $m(x)$ be the slope of the line which goes through the point $(0, 0)$ and the point (x, y) on the curve $y = x^2 e^{-0.25x}$.

What is the largest possible value for $m(x)$?



3. (3 points) What are the coordinates (x, y) for the highest point on the graph of the function

$$f(x) = \frac{e^{6x}}{e^{9x} + 4} ?$$

4. (2 points) Complete the sentences concerning the function $f(x) = 3 + 4xe^{-5x}$.

(a) The function f is decreasing on the interval _____

(b) The function f is increasing on the interval _____

(c) The function f is concave down on the interval _____

(d) The function f is concave up on the interval _____