

Name _____

(circle your TA discussion section)

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| ▷ AD1 , TR 11:00-12:50, Sarah Loeb / Hannah Spinoza | ▷ ADJ , TR 9:00-9:50, Nima Rasekh |
| ▷ AD2 , TR 9:00-10:50, M.Tip Phaovibul | ▷ ADK , TR 10:00-10:50, Michael Obiero Oyengo |
| ▷ AD3 , TR 1:00-2:50, Cara Monical | ▷ ADL , TR 11:00-11:50, Andrew McConvey |
| ▷ ADA , TR 8:00-8:50, Nima Rasekh | ▷ ADM , TR 12:00-12:50, Benjamin Wright |
| ▷ ADB , TR 9:00-9:50, Hong Liu | ▷ ADN , TR 1:00-1:50, Benjamin Wright |
| ▷ ADC , TR 10:00-10:50, Hong Liu | ▷ ADO , TR 2:00-2:50, Vanessa Rivera-Quiñones |
| ▷ ADD , TR 11:00-11:50, Stephen Berning | ▷ ADP , TR 3:00-3:50, Vanessa Rivera-Quiñones |
| ▷ ADE , TR 12:00-12:50, Stephen Berning | ▷ ADR , TR 9:00-9:50, Michael Santana |
| ▷ ADF , TR 1:00-1:50, Christopher Bailey | ▷ ADS , TR 12:00-12:50, Andrew McConvey |
| ▷ ADG , TR 2:00-2:50, Christopher Bailey | ▷ ADT , TR 2:00-2:50, Alessandro Gondolo |
| ▷ ADH , TR 3:00-3:50, Neriman Tokcan | ▷ ADU , TR 3:00-3:50, Alessandro Gondolo |
| ▷ ADI , TR 4:00-4:50, Neriman Tokcan | |

- 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 or the textbook.
- Computers are not allowed on any problem. You may use a calculator only for basic arithmetic.
- **The quiz should be submitted to Mr. Murphy at the beginning of your official lecture period on Friday, November 22nd.**
- 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.
- **Note to TAs and Tutors – you should not help students with these specific problems or go over solutions until after 5pm Friday.**

1. (3 points) Use the techniques of linear approximation found in section 3.10 to approximate $\frac{e}{\sqrt[4]{e^3}}$ without the use of technology.

2. (3 points) Let $g(x) = \int_{-125}^{x^3} f(t) dt$. Use the techniques of linear approximation found in section 3.10 to approximate $g(5.6)$ given the following information about f .

- f is continuous on the interval $(-\infty, \infty)$
- f is an odd function
- $f(125) = \frac{1}{150}$

3. (4 points) The function $g(x) = x^4 + 3x^2 - 5x$ has precisely one critical number. Determine the value of this critical number using Newton's Method with an initial estimate of $x_1 = 1$. You should use this method 3 times in order to obtain estimates x_2 , x_3 and x_4 . You are only allowed to use technology for basic arithmetic. Use at least 5 decimal places in each estimate.