

Name \_\_\_\_\_

(circle your TA discussion section)

- |  |   |
|--|---|
| ▷ <b>AD1</b> , TR 9:00-10:50, Ran Ji               | ▷ <b>ADH</b> , TR 3:00-3:50, Mina Nahvi           |
| ▷ <b>AD2</b> , TR 1:00-2:50, Cassie Christenson    | ▷ <b>ADJ</b> , TR 9:00-9:50, Yuxuan "Yuki" Zhang  |
| ▷ <b>AD3</b> , TR 11:00-12:50, Dana Neidinger      | ▷ <b>ADK</b> , TR 10:00-10:50, Souktik Roy        |
| ▷ <b>ADA</b> , TR 8:00-8:50, Eion Blanchard        | ▷ <b>ADL</b> , TR 11:00-11:50, Gidon Orelowitz    |
| ▷ <b>ADB</b> , TR 9:00-9:50, Eion Blanchard        | ▷ <b>ADM</b> , TR 12:00-12:50, Vincent Villalobos |
| ▷ <b>ADC</b> , TR 10:00-10:50, Yuxuan "Yuki" Zhang | ▷ <b>ADN</b> , TR 1:00-1:50, Kesav Krishnan       |
| ▷ <b>ADD</b> , TR 11:00-11:50, Stathis Chrontsios  | ▷ <b>ADO</b> , TR 2:00-2:50, Stathis Chrontsios   |
| ▷ <b>ADE</b> , TR 12:00-12:50, Kesav Krishnan      | ▷ <b>ADQ</b> , TR 4:00-4:50, Mina Nahvi           |
| ▷ <b>ADF</b> , TR 1:00-1:50, Souktik Roy           | ▷ <b>ADR</b> , TR 10:00-10:50, Vincent Villalobos |
| ▷ <b>ADG</b> , TR 2:00-2:50, Gidon Orelowitz       |   |

- 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 Monday, February 4th.**
- **TAs and Tutors – Do not help students with these specific problems until the quizzes have been collected for all MATH 220 lectures (9-9:50am, 10-10:50am).**

1. (4 points) The following two curves intersect. Find the  $x$ -value for each point of intersection.

$$y = 2 \ln(x + 9) + x^{100}$$

$$y = e^{50 \ln(x^2)} + \ln(3 - x) + \ln(2)$$

2. (3 points) Given that the function  $g(x)$  is one-to-one, determine a formula for its inverse  $g^{-1}(x)$ .

$$g(x) = \sqrt[3]{\frac{9 - 2e^{5x}}{4 + e^{5x}}}$$

3. (3 points) Find the exponential function  $f(x) = C \cdot a^x$  whose graph passes through the points  $(1, 54)$  and  $(4, 16)$ . Be sure that both  $C$  and  $a$  are written in simplified form.