

MATH 1220-90 Fall 2011

First Midterm Exam

INSTRUCTOR: H.-PING HUANG

LAST NAME _____

FIRST NAME _____

ID NO. _____

INSTRUCTION: SHOW ALL OF YOUR WORK. MAKE SURE YOUR ANSWERS ARE CLEAR AND LEGIBLE. USE **SPECIFIED** METHOD TO SOLVE THE QUESTION. IT IS NOT NECESSARY TO SIMPLIFY YOUR FINAL ANSWERS.

PROBLEM 1 20 _____

PROBLEM 2 20 _____

PROBLEM 3 20 _____

PROBLEM 4 20 _____

PROBLEM 5 20 _____

TOTAL 100 _____

2

PROBLEM 1

(20 pt) Find

$$\int_1^8 \frac{\ln(3x)}{x} dx.$$

PROBLEM 2

(20 pt) A curve is given by the equation:

$$y^3 + 129 = (e^x + 1)^2.$$

Find the slope of the tangent line at the point $(0, -5)$.

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PROBLEM 3

(20 pt) Find

$$\int \frac{x^2 - x}{x + 1} dx.$$

PROBLEM 4

(20 pt) $x > 0$, find $D_x y$ if

$$y = (6x)^{6x}.$$

PROBLEM 5

(20 pt) An object is taken from an oven at 350°F and left to cool in a room at 70°F . If the temperature fell to 250°F in one hour, what would its temperature be three hours after it was removed from the oven?