

1. (200) Define $f(x, y)$ as the arc length from $t = x$ to $t = y$ of the function

$$\mathbf{r}(t) = \langle t, t^2, t^2 \rangle.$$

Compute the distance from the origin to the tangent plane for $f(x, y)$ at $(x, y) = (1, 2)$.

SECTION : (circle one) NAME : _____
Weber (10 Hour) Vatter (11 hour) Vatter (12 hour)

Math 8

6 December 2008

Final Exam

INSTRUCTIONS: This is a closed book exam and no notes are allowed. You are not to provide or receive help from any outside source during the exam except that you may ask the instructor for clarification of a problem. You have three hours and you should attempt all problems.

- **Except for the multiple choice questions, you must show all work and give a reason (or reasons) for your answer. A CORRECT ANSWER WITH INCORRECT WORK WILL BE CONSIDERED WRONG.**
 - *Print* your name in the space provided and circle your instructor's name, **both on this exam and on the answer sheet.**
 - Calculators or other computing devices are not allowed.
 - Use the blank page at the end of the exam for scratch work.
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Problem	Points	Score
1	200	
Total	200	