

Quiz **11**

EXPERIENCED CALCULUS I

Name: _____

Math 114

Date: _____

Friday, November 18, 2005

Time Begun: _____

Ron Buckmire

Time Ended: _____

Angela Gallegos

Topic: Optimization

This quiz is intended to provide you with an opportunity to illustrate your facility with optimization problems and extreme values.

Reality Check:

EXPECTED SCORE : _____/10

ACTUAL SCORE : _____/10

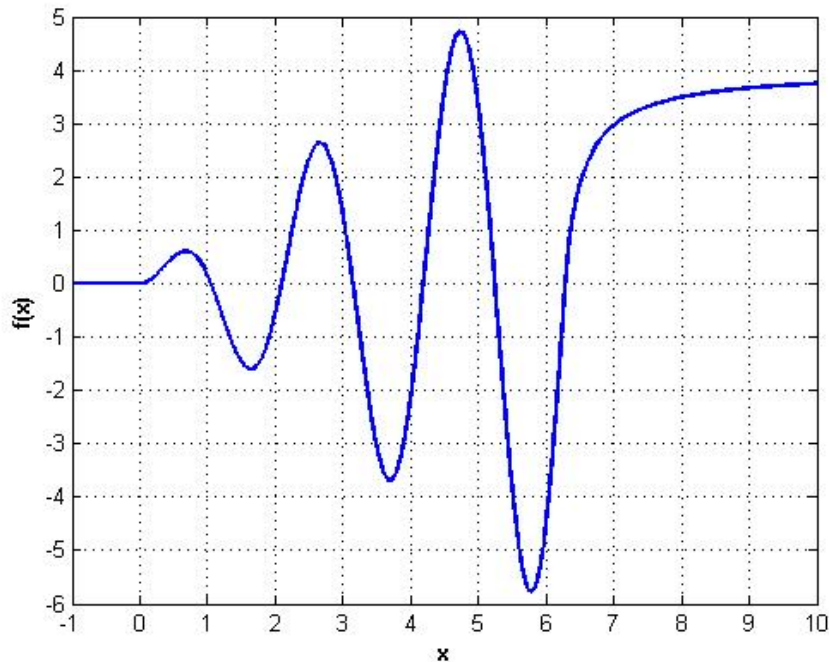
Instructions:

0. Before you open the quiz, check the course website or Blackboard for a hint.
1. Once you open the quiz, **you have 30 minutes to complete it.**
2. You may not use your text or any other source, including course materials. You may use a calculator. You must work alone. Do not discuss the contents of this quiz with anyone.
3. If you use your own paper, please staple it to the quiz before coming to class. If you don't have a stapler, buy or borrow one. **UNSTAPLED PAPERS WILL NOT BE GRADED.**
4. After completing the quiz, sign the pledge below stating on your honor that you have adhered to these rules.
5. Your solutions must have enough details such that an impartial observer can read your work and determine HOW you came up with your solution.
6. **This quiz is due on Monday, November 14,** at the beginning of class. **NO LATE QUIZZES WILL BE ACCEPTED.**

Pledge: I, _____, pledge my honor as a human being and Occidental student, that I have followed all the rules above to the letter and in spirit.

Show all your work and explain all your answers.

1. Consider the graph of the function below. For all questions below you can assume the domain is $-1 \leq x \leq 10$.



- a. (4 points) Label **all** local maxima with **LMa**; similarly, label **all** local minima with **LMi**. Then, label **all** global maxima with **GMa**; similarly, label **all** global minima with **GMi**.

- b. (6 points) **True/False**. Indicate in the blanks whether the following statements are true or false. For a statement to be true, it must be always be true. For a statement to be false, it only needs to be false for one example. Some justification (i.e. a sentence) should be included with each response. There will be more credit for the justification than the choice of True or False.

(i) All local extrema are also global extrema.

(ii) In the function above for the domain $7 \leq x \leq 10$ there are no extrema (either local or global).

(iii) In the function above, for the domain $x < 0$, 0 is the global minimum.