

BONUS Quiz 2

EXPERIENCED CALCULUS I

Name: _____

Date: _____

Time Begun: _____

Time Ended: _____

Math 114

Friday, September 9, 2005

Ron Buckmire

Angela Gallegos

Topic: Euler's Method and Slope Fields

Reality Check:

EXPECTED SCORE : _____/10

ACTUAL SCORE : _____/10

Instructions:

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 bonus quiz is due on Monday, September 19**, 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.

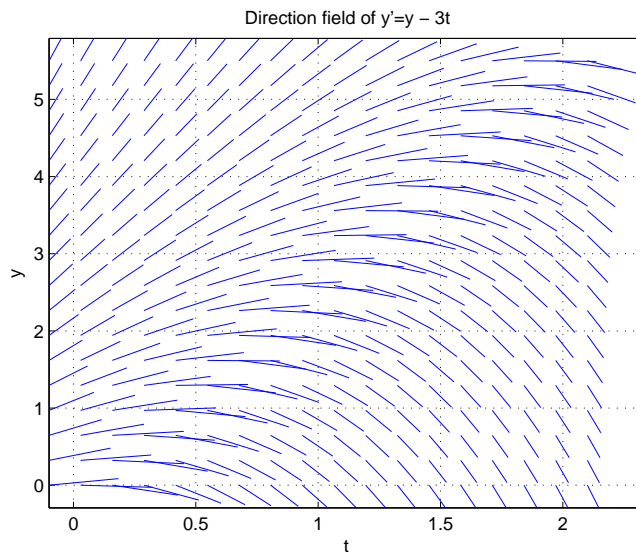
SHOW ALL YOUR WORK

1. (10 points). Here is an IVP that you have seen before:

$$y'(t) = 3t - y, \quad y(0) = 2$$

- a. (4 points) Obtain an approximation for $y(2)$ using Euler's Method with $\Delta t = 1$.

- b. (2 points) Sketch your piecewise linear approximation computed in (a) on the slope field below.



- c. (2 points) Find the equation for each line segment in your piecewise linear approximation obtained in (a) and sketched in (b).

- d. (2 points) Based on the slopefield and your Euler's method calculation, do you think the EXACT value of $y(2)$ is larger or smaller than the value calculated using Euler's Method? Explain.