

**MATH 141 Fall, 1994 Homework #1 Name:** \_\_\_\_\_

These problems are due on Wednesday, September 7 (except for the very last one). Answers should be clearly and carefully presented, using correct English and appropriate mathematical terminology and symbols. Answers should include supporting evidence.

1. Be sure you understand all of the computer worksheet demo.ms.
  - a. Find the place where  $2u^3 + 4u - 5 = 0$  to 2-decimal place accuracy. Record the steps you made in zooming in from  $[-10, 7]$ , and indicate why you believe your answer has the required accuracy.
  - b. Explain the little bumps that appear in the large dips in the graph of  $s(x)$ .
  - c. Change the last plot statement to graph  $(1 - t^2 + 3t^4)/(1 + t)$ . Change the restriction on the domain  $x = -3 \dots 5$  and the restriction on the range  $-10 \dots 10$  to get a window that includes the two turning points of the function (where it changes from increasing to decreasing or *vice versa*). Use the mouse to estimate the coordinates of these two points, and indicate how good you believe these estimates to be.
2. Mark Twain's *Mississippi* problems #8, 10, and 11 from the text, page 21. Be prepared to discuss the remaining problems (#12, 13, and 14) in class.
3. Problem 3d from worksheet #2.
4. Problem #4 from worksheet #2.
5. Read pages 1–11 of the text very slowly and carefully.
  - a. Suppose you were in charge of this class and were writing up a quiz on this material. Prepare a good question. (Actually a question to which you do not know the answer, but would like to know, would also be OK.)
  - b. (due Wednesday) Problems #1–4 and 7 from the text, page 19.