QUIZ #10: CALCULUS 1A (Stankova)
Wednesday, April 7, 2004
Section 10:00–11:00 (Voight)

Name:

Please complete the following problem(s) in the space provided. You may *not* use a calculator. You will have 15 minutes to complete the quiz.

Please include all relevant intermediate calculations and explain your work when appropriate.

Problem 1. *Find two numbers whose product is* 4 *and for which the sum of their squares is a minimum.*

QUIZ #10: CALCULUS 1A (Stankova)
Wednesday, April 7, 2004
Section 11:00–12:00 (Voight)

Name:

Please complete the following problem(s) in the space provided. You may *not* use a calculator. You will have 15 minutes to complete the quiz.

Please include all relevant intermediate calculations and explain your work when appropriate.

Problem 1. *Consider the cost function*

$$C(x) = 16 + x^3.$$

given in millions of dollars.

(a) *At what production level x is the average cost minimal?*

(b) *Let*

$$p(x) = 36 - 3x - x^2$$

be the demand function. At what production level x is the profit maximal? What is the maximum profit?