Show your work on the quiz paper. Full credit is not given unless the answer follows from the work shown.

1. (12 points) A rectangular garden of area 1800 square feet is to be surrounded on three sides by wire fencing costing $\$ 2$ per foot and on one side by wood fencing costing $\$ 6$ per foot. The goal is to determine the dimensions of the garden such that the cost of the fencing is minimized.
(a) State the objective function for this problem.

(b) State the constraint equation for this problem.
(c) Use calculus to determine the dimensions of the garden that will minimize the cost of the fencing.
$\qquad$
$\qquad$
(d) What is the minimum fencing cost?

2. (13 points) A management training company finds that 1000 people will attend its seminar on management training techniques if the price is $\$ 400$ per person. The company estimates that for each $\$ 5$ reduction in price, an addition 20 people will attend the seminar.
(a) Let $x$ be the number of people who will attend the seminar at price $p$ dollars per person. Use the given information to write two data points of the type ( $\mathrm{x}, \mathrm{p}$ ) and then use these points to find the equation of the function $p=f(x)$.
(b) Write the revenue function for this situation.
(c) Use calculus to determine the value of x that will result in maximum revenue.
(d) What ticket price will result in maximum revenue?
(e) What will the maximum revenue be?
