MATH 108 – QUIZ 11 – 12 NOVEMBER 1998

Answer all of the following questions in the space provided. Show all work as partial credit may be given. Answers without justification, even if they are correct, will earn no credit.

1. (5 pts.) An efficiency study of the morning shift at a certain factory indicates that t hours after arriving on the job at 8:00am, an average worker will be assembling radios at a rate of $R(t) = -3t^2 + 12t + 15$ radios per hour. At what time during the morning ($0 \leq t \leq 4$) is the worker performing most efficiently, i.e., making radios at the greatest rate? At what time during the morning ($0 \leq t \leq 4$) is the worker performing least efficiently?

2. (5 pts.) A printing company uses 10000 reams of paper per year. Suppose that the cost of storing each ream of paper is 2 dollars per year and that the ordering fee for a shipment of paper is 25 dollars. How many reams of paper should the company order in each shipment in order to minimize ordering cost plus storage cost?