

1. **Redo the quizzes since the second exam, and scan the homework problems that you may or may not have done. Do them!** Then look at the additional problems listed below.
2. At a production level of q items the revenue is $R(q) = 450q$ and the cost of production is $C(q) = 10,000 + 3q^2$. The profit is of course $P(q) = R(q) - C(q)$. Do this subtraction carefully—use parentheses if necessary!
 - a. Find q so that the profit $P(q)$ is at a local maximum, and give the dollar amount of this profit. Use first and second derivatives to find and justify your answer. How is this consistent with our previous idea that maximum profit is found where marginal revenue is equal to marginal cost?
 - b. Find the global minimum profit (which might actually be negative, that is, a loss) for production level q with $0 \leq q \leq 100$.
 - c. Check your answers to (a) and (b) by graphing $P(q)$ on your calculator!
3.
 - a. For concavity problems, see 2.4 problems # 3, 15, 24.
 - b. For max-min problems see section 4.3 problems # 4, 5, 13, 21, 25, and chapter 4 review (p. 213) problems # 1, 2, 7abd, 11, 31, 36.
4. For the concept of the definite integral, the Fundamental Theorem, and applications, see chapter 5 review (p. 246) problems # 1, 3, 4, 13, 15, 19, 21.
5. For indefinite integral (antiderivative) problems see chapter 7 review (p. 296) problems # 1, 3, 11, 23, 25, and focus on practice (p. 299) problems # 5, 11, 13, 25, 35.