MATH 1520 Quiz 4 March 19, 2008

- 1. The manufacturer of Lima Lunch Boxes has determined that the demand price for each Lunch Box is given $p = 5x e^x$.
- [1] (a) Determine the revenue function R(x) from the demand price.
- [3] (b) Determine the marginal revenue.
- [4] 2. Winchester Widgets shows a profit of $P(x) = x \log_{10} (x^2 1)$. Find the marginal profit.
 - 3. The manufacturer of Lima Lunch Boxes has determined that the demand price for each Lunch Box is given $p = 2x^2 e^x$.
- [1] (a) Determine the revenue function R(x) from the demand price.
- [3] (b) Determine the marginal revenue.
- [4] 4. Winchester Widgets shows a profit of $P(x) = 5x + \log_3(x^3 1)$. Find the marginal profit.
 - 5. Below is the graph of a function y = f(x).



- [5] (a) Fill in the blanks with either "+", "-", or "0" to indicate if the quantity is positive, negative, or zero:

[2] (b) In the graph of f, there is a vertical asymptote. State the equation of the asymptote and explain *why* this line is an asymptote. (You must use limits for full marks.)