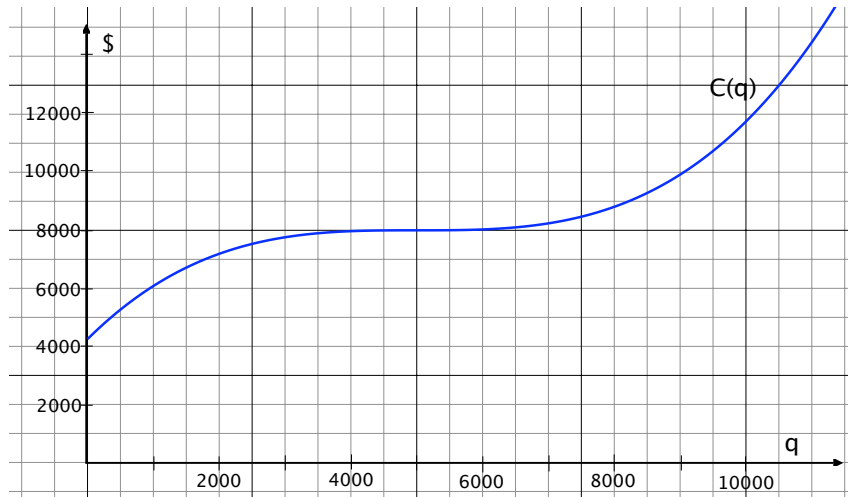


Name: _____

Math 112 Worksheet #4
February 9, 2007

1. Find the local and global maxima and minima for the function $f(x) = 50(e^{-.5x} - e^{-x})$ on the interval $1 \leq x \leq 10$. Sketch a graph of f .
2. Suppose you sell widgets for \$300 each. The marginal cost for producing widgets is $MC(q) = q^2 - 70q + 1300$. Should you increase production if you have already produced 30 items? 70 items? How many widgets should you sell to maximize profit?
3. The total cost of producing cheese graters is shown in the graph below.



- (a) Estimate the average cost of producing 5000 graters.
- (b) Estimate the minimum average cost (i.e. the breakeven price).
- (c) The following table shows the total sales (in thousands) of the cheese graters t months after the product is released. Approximately when is the point of diminishing returns reached? Estimate the total possible sales.

Month	2	4	6	8	10	12	14
Sales	16.8	41.8	93.1	169.6	243.1	289.2	310.8