MATH 135: Quiz 12

December 2, 2014

Name: _____ Sec: _____

1. You are producing widgets to sell for a profit. If the price of the widgets is p dollars, then you believe you will be able to sell $x = 300 - 2p$ widgets. The cost to produce x widgets is given by

$$C(x) = 20 + 30x - 5x^2 + x^3.$$

(a) How many widgets should you produce to maximize your profit?

(b) How much are you selling the widgets for?

(c) What is the average cost to produce the widgets?

2. Compute the indefinite integral

$$\int \cos(x) + 4e^x + x^3 \, dx$$

3. Approximate the area under the curve $y = x^2 + 2x$ between $x = 1$ and $x = 3$ using a right-endpoint Riemann Sum, with $n = 2$.