Name: _____

# Math 135, Quiz #10, April 21, 2014

**1.** Let $C(x) = \frac{1}{8}x^2 + 5x + 98$ be the cost of producing $x$ units of widgets. The manufacturer sets the selling price at $p(x) = \frac{1}{2}(75 - x)$ per widget when $x$ units are produced. What level of widget production optimizes the profit?

**2. a)** Find the general antiderivaitve of $f(x) = 4x^3 + x^2 - 3x + e^x$. Don't forget your constant term!

**b)** Suppose $F(x)$ is an antiderivative of $f(x)$ and we know that $F(0) = 5$. What is $F(x)$?