PRACTICE QUIZ 2

NAME (please print clearly):

Note: You have 15 minutes to complete the quiz. Show your work! NO TEXTBOOKS or NOTES are allowed.

Problem 1. A company producing jigsaw puzzles has fixed costs of $6000 and variable costs of $2 per puzzle. The company sells the puzzles for $5 each. a) (5 points) Find formulas for the cost function $C(q)$, the revenue function $R(q)$, and the profit function $\pi(q)$; b) (5 points) Sketch a graph of $R(q)$ and $C(q)$ on the same axes. What is the break-even point, $q_0$, for the company?

Problem 2. a) (5 points) The release of chlorofluorocarbons used in air conditioners and household sprays destroys the ozone in the upper atmosphere. The quantity of ozone, $Q$, is decaying exponentially at a continuous rate of 0.25% per year. What is the half-life of ozone? In other words, how long will it take for half the ozone to disappear? b) (5 points) If $f(x) = \ln x$ and $g(x) = x^2 + 1$, find $g(f(x))$ and $f(g(1))$. 