MATH 140: Quiz 6

Name:

#1. (10 points) Find the average value of the function $f(t) = \ln(t^4 + t)$ on the interval $[10, 100]$.

#2. (10 points) The demand curve for a product is given by $p = 3q^2 + 25$ and 10 units are sold. What is the producer surplus?

Bonus (5 points) The profit of a product over the next 5 years is given by $\pi(t) = 20 - 2t$ (dollars/unit) where t is the number of years from now. The number of units sold will be $q(t) = 1000 - 40t$ (units/year). If you can continuously and immediately deposit your profits into an account with 4% interest rate, how much will you have at the end of the 5 years?