Homework for Week 4
October 13-17, 2008

Written Homework

Your carefully written solutions to the following questions will be due at the beginning of class on **Tuesday, October 21**.

1. Find the area that is bounded between the curves \( y = x^2 + 13 \) and \( y = 2x^2 - 4x + 8 \).
   
   *(Hint: Start by sketching a graph.)*

2. The demand curve for a certain product is given in dollars by
   \[
   p = x^2 - 200x + 10000,
   \]
   where \( x \) is the number of units sold. Find the consumer surplus when the price is $2500.

3. Oil leaks from a tank at a rate of \( r(t) = 200 - 100 \tan^{-1}(t) \) gallons/minute, where \( t \) represents the number of minutes since the leak began. Determine how much oil leaks from the tank in the first two hours. Round your answer to the nearest gallon.

Daily Practice Problems

You should do the suggested reading below and attempt these exercises after class each day. You *will not submit* solutions to these questions for grading, but you may use them as notes during the weekly quizzes on Fridays.

After class on **Monday, October 13**, read Section 6.6 (through example 1) and work the following exercises:

Section 6.6, # 1, 3, 5

After class on **Tuesday, October 14**, finish reading Section 6.6 and work the following exercises:

Section 6.6, # 15