Warm-up Problems - January 19, 2006

1. Let

\[ D(x) = -0.001x^2 + 250 \quad S(x) = 0.0006x^2 + .02x + 100 \]

(a) Solve for \( x \) in \( D(x) = 210 \)
(b) Find \( S(200) \).
(c) Solve \( D(x) = S(x) \)

2.

\[ D(x) = 144 - x^2 \quad S(x) = 48 + \frac{1}{2}x^2 \]

Solve \( D(x) = S(x) \)

Lecture Problems

3. Supply and demand curves are given below

\[ D(x) = 144 - x^2 \quad S(x) = 48 + \frac{1}{2}x^2 \]

(a) Find the equilibrium price and quantity (see Problem 2).
(b) For the equilibrium price and quantity, find the consumer’s surplus and the producer’s surplus.