

Assignment 1

Answers

Problem 1

- (a) TE = 12, CS=4, TV=16.
- (b) After paying the fee she will have net CS of 7.25, she should purchase the membership.

Problem 2

CALCULATIONS (2 points)

When price is equal to 9, 7.5, 5, 2.5, 1.

Quantity is equal to 2, 5, 10, 15, 18

total revenue is 18, 37.5, 50, 37.5, 18.

Elasticity = $-2\frac{P}{Q} = -9, -3, -1, -.33, -.11$.

TR = 0 when Q=0 and Q=20. TR is maxed when Q=10 (demand is unit elastic).

EXPLANATION (3 points) Lower price will increase total quantity sold. When demand is elastic the quantity is responsive to price changes and 1 percent decrease in price will result in Q increase by more than 1%. Therefore, although lower price raises lower *revenue per unit*, this impact will be more than offset by increase in quantity sold and TR will increase if price falls.

Problem 3 $Q_1^0 = 30$

- (a) $P_2^0 = 5, P_2' = 4, Q_1' = 39. \Delta P_2 = -1, \Delta Q_1 = 9$. Using the initial price and quantity:
 $E_{12} = \frac{9}{-1} \cdot \frac{5}{30} = -1.5$. **Complements.**

Using average price and quantity is okay as long as the formula is provided.

- (b) $M_0 = 25,000, M' = 22,500, Q_1' = 36. E_M = \frac{6}{-2,500} \cdot \frac{25,000}{30}$. Obviously this is an inferior good: lower income induces people to buy more pizza; income elasticity of demand is negative.

As a practice try showing both situations on diagrams.