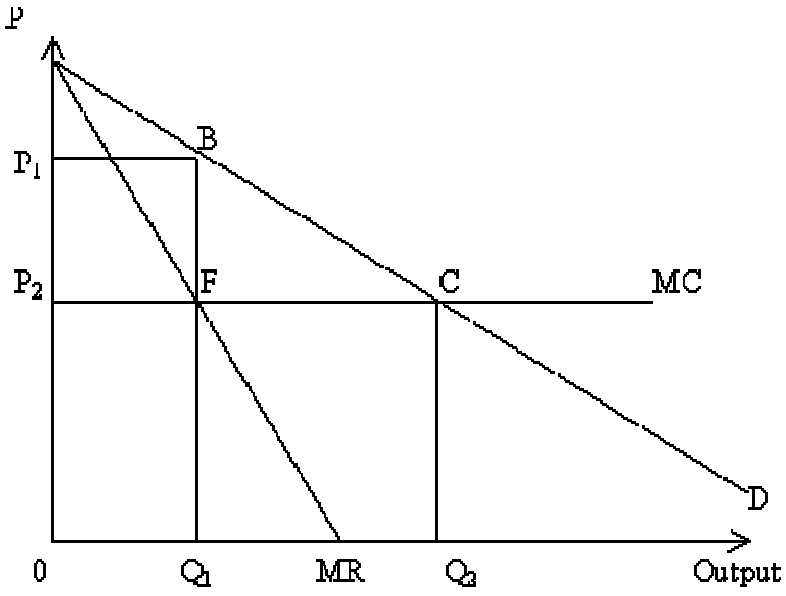
Answers to Homework # 8

Answer questions 12.2, 12.13, and 12.15 on pages 368 and 369 of the textbook. Use graphs to carefully illustrate your explanation for question 12.2 *and* 12.15.

Hint: for question 12.13, the marginal revenue associated with the serious (S) golfers is $MR_S = 35 - 0.20Q_S$ and the marginal revenue associated with the casual (C) golfers is $MR_C = 10 - 0.20Q_C$.

Answer to 12.2

The figure below shows a single consumer's demand for telephone services, and the constant marginal costs (also equal to AC) of the local telephone service provider. The uniform-price monopoly charges P_1, output is Q_1 and profit is P_1BFP_2. This is for each consumer, so total profit is P_1BFP_2 times the number of consumers. The price under a two-part tariff is P_2, output Q_2, and the entry fee for each consumer is ACP_2 (where A is maximum height of the demand curve). Profit for the firm equals the entry fee times the number of consumers. Under the two-part tariff, the phone company captures all the consumer surplus.

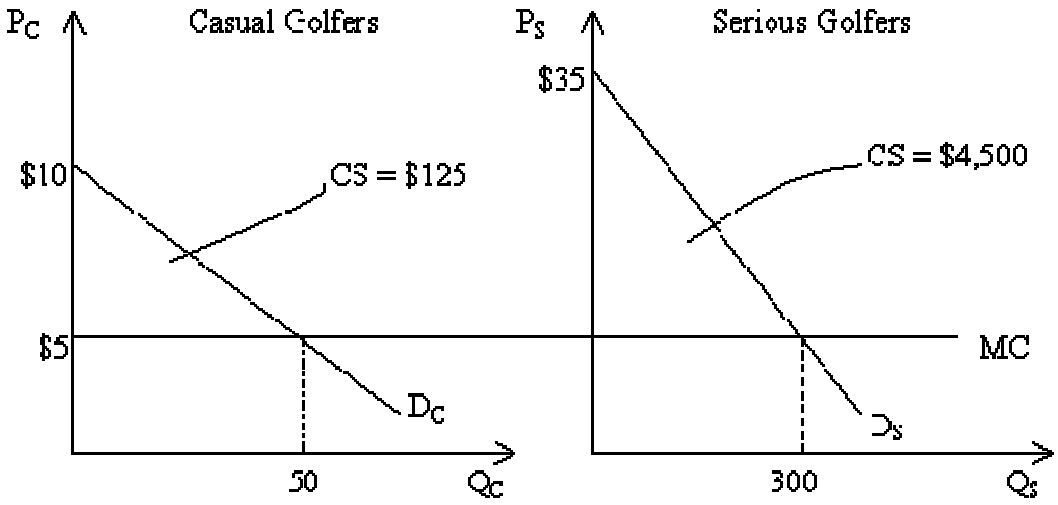


Answer to 12.13

Let C = casual golfers and S = serious golfers. The club can maximize profits by setting $MR_S = MR_C = MC$. To calculate TR and MR for each group, we need to rewrite each demand curve in terms of quantity. Serious golfers have a demand of $P_S = 35\text{-}0.10Q_S$ so $TR_S = 35Q_S\text{-}0.10Q_S^2$ and $MR_S = 35\text{-}0.20Q_S$. The casual golfers have a demand of $P_C = 10\text{-}0.10Q_C$ so $TR_C = 10Q_C\text{-}0.10Q_C^2$ and $MR_C = 10\text{-}0.20Q_C$. Setting MR_S and MR_C equal to \$5,

yields $Q_C = 25$ and $Q_S = 150$. Plugging these quantities back into their respective demand curves gives $P_C = \$7.50$ and $P_S = \$20$.

Answer to 12.15



Using a two-part pricing scheme, the club charges an entry fee shown by the CS area in the diagram above and a per-round price equal to the $5 marginal cost. Here the club extracts all of the consumer surplus with the entry fee, which is $125 for casual golfers and $4,500 for serious golfers. To calculate the entry fee for each group, you must find the quantity purchased at the price of $5 and then calculate the CS at that quantity.