

**DISCUSSION QUESTION**

Name:

Instructor:

Course:

On June 29, 2007, Apple released its first iPhone. Thousands of people waited in line for hours and were willing to pay \$600 for the 8 GB model. Approximately two months after its initial release, Apple reduced the price of the iPhone by \$200. A customer who paid the higher price for the iPhone named Dongmei Li sued Apple for \$1 million, claiming that Apple engaged in illegal price discrimination.

- a) Why did Apple charge a higher price to customers who purchased the iPhone within the first few months of its release?
  
  
  
  
  
  
  
  
  
  
- b) Do you think Apple's actions were illegal? What do you think the outcome of Dongmei Li's case against Apple was?
  
  
  
  
  
  
  
  
  
  
- c) Apple ended up offering a \$200 rebate to all customers who had paid the higher price for their iPhone. Why did they do this?

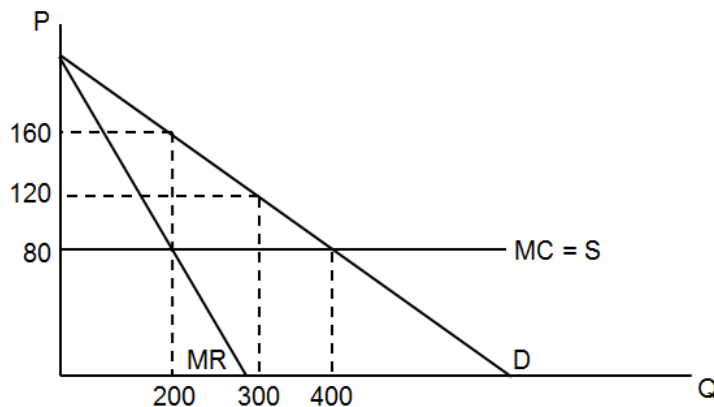
## PEER GROUP PROBLEM SOLVING

Name:

Instructor:

Course:

Use the following graph to answer the following questions.



- Suppose the firm shown above represents a single price monopolist (one which cannot price discriminate). What price will they charge and what quantity will they produce?
- What is the amount of deadweight loss associated with a single price monopolist?
- Suppose the firm above is able to price discriminate as follows: they charge a price of \$160 for the first 200 units, then a price of \$120 for the next 100 units. What is the gain in producer surplus and consumer surplus as a result?
- What is the new amount of deadweight associated with this price discriminating monopolist?

**IN-CLASS EXPERIMENT / ACTIVE EXERCISE**

Have students either break up into groups of 3 or 4 or ask 3 or 4 students to volunteer for the class.

- a) Report your maximum willingness to pay for hypothetical good, like either a blu-ray disk for a popular movie or for the Core Economics textbook. Give students a constant hypothetical marginal cost for the good.
- b) Determine the profit maximizing price for the good if only one price can be charged to all consumers. Calculate profit.
- c) Now the firm can engage in first degree price discrimination and observes everyone's maximum willingness to pay. Calculate the new profit level. How much profit is gained as a result of price discrimination?

**SOLUTIONS AND INSTRUCTOR NOTES**Discussion Question

On June 29, 2007, Apple released its initial iPhone. Thousands of people waited in line for hours and were willing to pay \$600 for the 8 GB model. Approximately two months after its initial release, Apple reduced the price of the iPhone by \$200. A customer who paid the higher price for the iPhone named Dongmei Li sued Apple for \$1 million, claiming that Apple engaged in illegal price discrimination.

- a) Why did Apple charge a higher price to customers who purchased the iPhone within the first few months of its release?

*Because those who wanted the iPhone initially were willing to pay more than those who were willing to wait. Essentially, those who purchased it within the first few months had a more inelastic demand than those who purchased it later. Therefore, Apple could generate higher profits by charging \$200 more to those who purchased it initially, and then offering a discount to those who had more elastic demands.*

- b) Do you think Apple's actions were illegal? What do you think the outcome of Dongmei Li's case against Apple was?

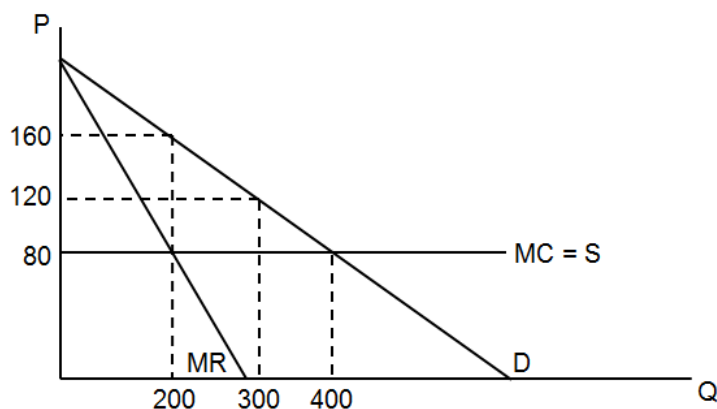
*Apple's actions were not illegal. This form of price discrimination is very common. On March 3, 2009, a judge dismissed Dongmei Li's complaint.*

- c) Apple ended up offering a \$200 rebate to all customers who had paid the higher price for their iPhone. Why did they do this?

*The lawsuit garnered a lot of media attention and even though their actions were perfectly legal, it generated a large amount of negative publicity for Apple. Out of consideration for their future profits and company relations, they offered the \$200 discount.*

Peer Group Problem Solving

Use the following graph to answer the following questions.



- a) Suppose the firm shown above represents a single price monopolist (one which cannot price discriminate). What price will they charge and what quantity will they produce?

*They produce where  $MR = MC$ , which happens at a quantity of 200. The price they charge is \$160.*

- b) What is the amount of deadweight loss associated with a single price monopolist?

*The deadweight loss is equal to  $0.5 \times (\$160 - \$80) \times (400 - 200) = \$8,000$ .*

- c) Suppose the firm above is able to price discriminate as follows: they charge a price of \$160 for the first 200 units, then a price of \$120 for the next 100 units. What is the gain in producer surplus and consumer surplus as a result?

*The gain in producer surplus =  $(\$120 - \$80) \times (300 - 200) = \$4,000$ .*

*The gain in consumer surplus =  $0.5 \times (\$160 - \$120) \times (300 - 200) = \$2,000$ .*

- d) What is the new amount of deadweight associated with this price discriminating monopolist?

*The new deadweight loss area equals  $0.5 \times (\$120 - \$80) \times (400 - 300) = \$2,000$ . This means society has benefited by \$6,000 as a result of this price discrimination.*

### In-Class Experiment / Active Exercise

Have students either break up into groups of 3 or 4 or ask 3 or 4 students to volunteer for the class.

- a) Report your maximum willingness to pay for hypothetical good, like either a blu-ray disk for a popular movie or for the Core Economics textbook. Give students a constant hypothetical marginal cost for the good.

*The only condition that is necessary for this exercise to show gains from price discrimination is that there is some disparity in students' willingness to pay and for the*

*marginal cost to be lower than at least two students reported willingness to pay. Therefore, make the marginal cost relatively low (say, \$3 for the blu-ray or the textbook).*

- b) Determine the profit maximizing price for the good if only one price can be charged to all consumers. Calculate profit.

*This can be difficult to calculate if there are a large number of students in a group, but manageable for groups for 3 or 4. The number of pricing options would equal the number of students in the group. The profit would equal  $P \times Q \text{ sold} - MC \times Q \text{ sold}$ .*

- c) Now the firm can engage in first degree price discrimination and observes everyone's maximum willingness to pay. Calculate the new profit level. How much profit is gained as a result of price discrimination?

*The profit maximizing price would be equal to each student's willingness to pay, and the new profit level equals the sum of all students' maximum willingness to pay - marginal costs. As long as there is any disparity in the reported willingness to pay among students, profit will be higher as a result of price discrimination.*

*For more in-class experiment and active learning ideas, visit [www.econedactive.com](http://www.econedactive.com).*