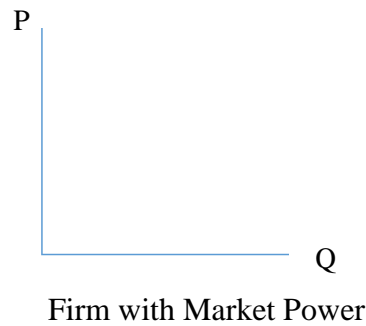
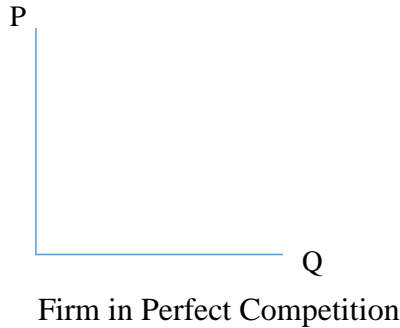


Topic 12 – Monopoly

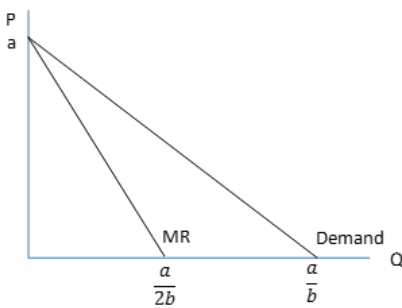


Big Questions – How do Monopolies Behave?

I. **Market Power**
 Refers to a firm's ability to _____.



II. **Marginal Revenue**
 The change in the firm's total revenue that results from a one-unit increase in output. $MR = \frac{\Delta TR}{\Delta Q}$



If demand is given by: $P = a - b \cdot Q$

$MR =$

The marginal revenue curve always falls below demand because increasing the number of sales requires lowering the price for all consumers, not just the new sale.

Example: Suppose that there is only one firm that produces a product, and that demand for that product is given by $P = 120 - 2Q$. The firm has the following costs: $MC = \$15 + Q$ and $FC = \$0$.



- Steps for Single Price Monopoly**

 1. Find the Marginal Revenue curve
 2. Produce as long as $MR \geq MC$
 3. Plug Q back into Demand to get P.

Monopoly

What's Socially Optimal?

Example: Suppose that there is only one firm that produces a product, and that demand for that product is given by $P = 60 - Q$. The firm's costs are $MC = \frac{1}{2} Q$ and no fixed costs.

a. What price and quantity will maximize the firm's profits?

b. How much would the market produce if it were perfectly competitive?



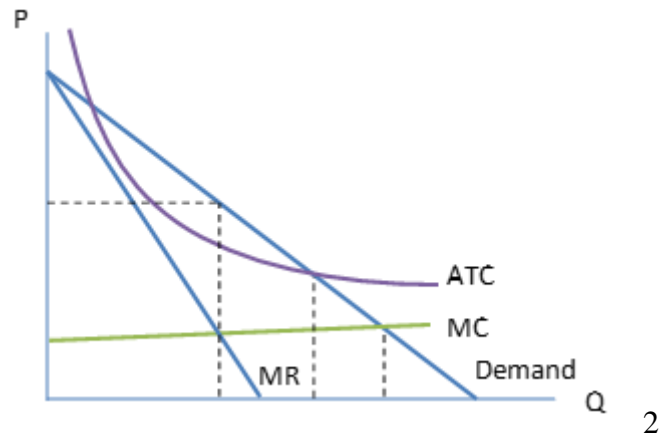
c. Calculate the loss in economic efficiency (DWL) that results from the monopoly.

III. Sources of Market Power

1. Exclusive Control over Inputs
2. Intellectual Property Protections (Patents and Copyrights)
3. Government Licenses
4. Network Externalities
5. Natural Monopoly

Problem:

Solutions:

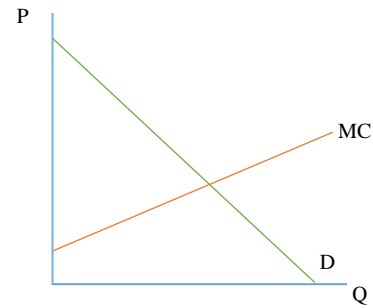


IV. Price Discrimination

A firm is able to charge different prices to different customers based on their willingness to pay.

Necessary conditions:

- 1.
- 2.
- 3.



Types of Price Discrimination:

First Degree:

Second Degree:

Third Degree:

Ex:

Ex:

Ex:

Example: Suppose you sell shirts on campus, and in any given hour 6 people will stop by your booth. Each shirt costs \$5 to produce and your fixed costs are \$2 (MC = \$5, FC = \$2).

Customer	Reservation Price	Q	Total Revenue	Marginal Revenue	Total Revenue	Marginal Revenue
A dele	\$16					
B eyoncé	\$14					
C hristina Aguilera	\$12					
D avid Bowie	\$10					
E d Sheeran	\$8					
F reddie Mercury	\$6					

- a. What is the socially optimal quantity of shirts in this market?
- b. How many shirts will the firm sell if it is a single price monopoly? How much profit will it earn?
- c. How many shirts will the firm sell if it can charge different prices for women's' and men's shirts? How much profit will it earn?
- d. How many shirts will the firm sell if it can perfectly price discriminate? How much profit will it earn?

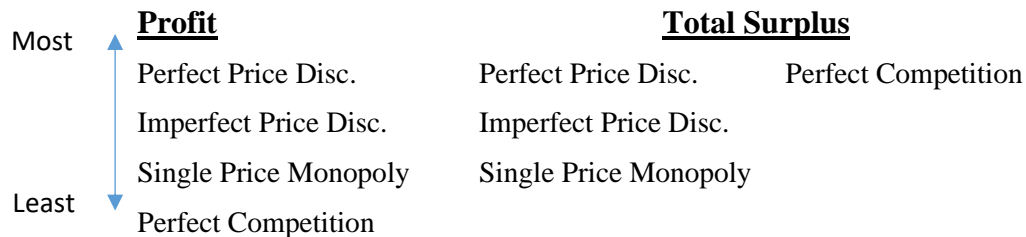
Example: You own the only pet store in a small town. Monthly demand for snakes is given by the table below. Each snake costs \$24 to care for until its old enough to sell, $MC = \$24$, $FC = \$10$.

Customer	Quantity	Price	Total Revenue	Marginal Revenue	Total Revenue	Marginal Revenue
Andy Warhol	1	\$50				
Banksy	2	\$45				
Claude Monet	3	\$40				
Diego Rivera	4	\$35				
Edvard Munch	5	\$30				
Frida Kahlo	6	\$25				
Georgia O'Keeffe	7	\$20				

- What is the socially optimal quantity of snakes in this market?
- What is the single-price monopoly equilibrium price and quantity? How much profit will be earned?
- Now suppose that consumers D, E, F and G are students, but A, B, and C are not. If the firm can offer a student discount, what prices will you set for both students and non-students? Is profit for the price discriminating firm more or less than for the single price monopoly?
- How many snakes will the firm sell if it is able to perfectly price discriminate? Calculate profit if the firm is able to perfectly price discriminate.



V. Summary



VI. Assignments

1. Video Assignment and Problem Set 12 due on 4/3/20.