



## Lecture 17

- **Profit maximization**  
Revenue vs. profit maximization
- **Marginal revenue and marginal cost**
- **Choosing output in the short-run vs. in the long-run**



## Profit

- **Definition:**

Profit is defined as the difference between revenue and economic cost (opportunity cost)
- **Profit maximization: (examples)**

Each firm chooses its output so that the difference between its revenue and cost (profit) is maximized
- **Shape of the profit curve: (Figure 8.1)**
- **Profit maximization condition:**
  - Slope of the total revenue curve = Slope of the total cost curve
  - $MR = MC$



## Competitive Firms

- **Definition:**

Each firm in a competitive industry sells only a small fraction of the entire industry sales so that how much output the firm decides to sell will have no effect on the market price of the product

- **Demand curve: (Figure 8.2)**


- For a competitive industry
- For a competitive firm

- **Profit maximization:**

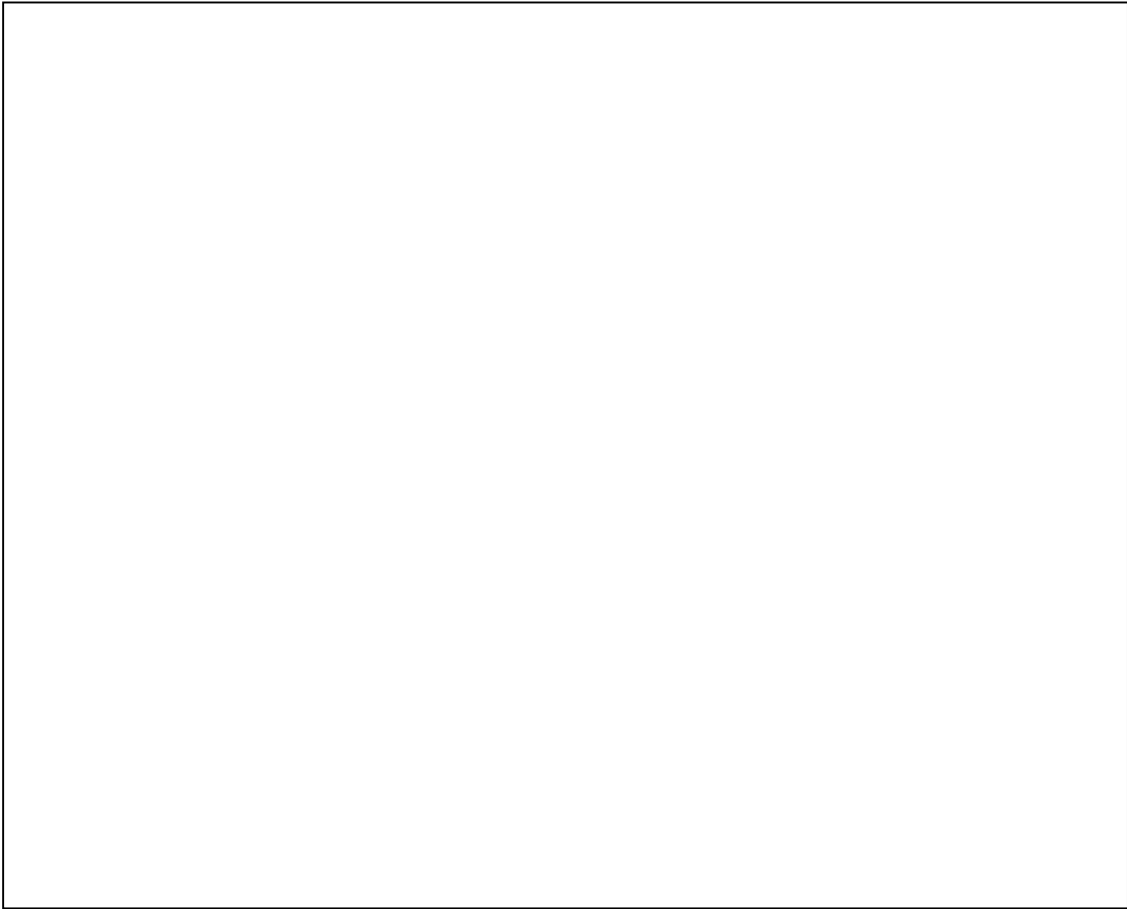
$$MC = MR = P$$

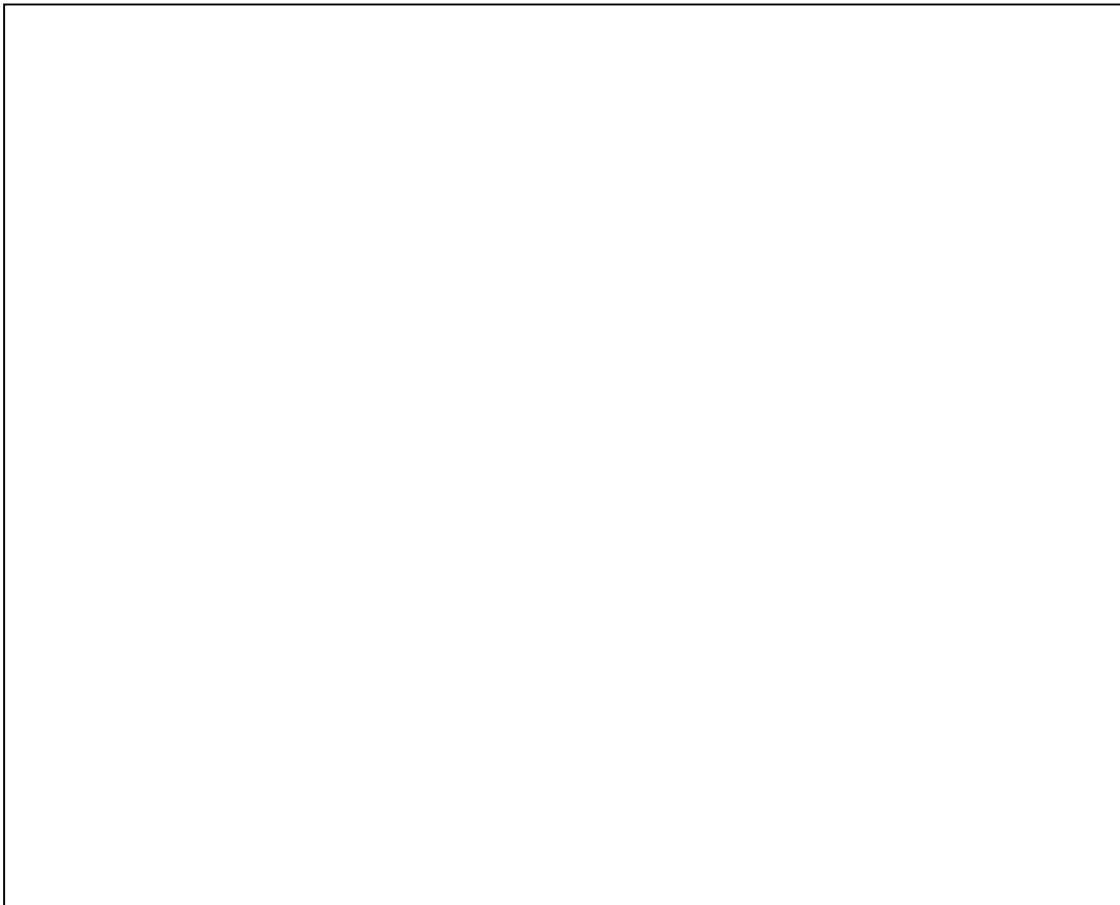
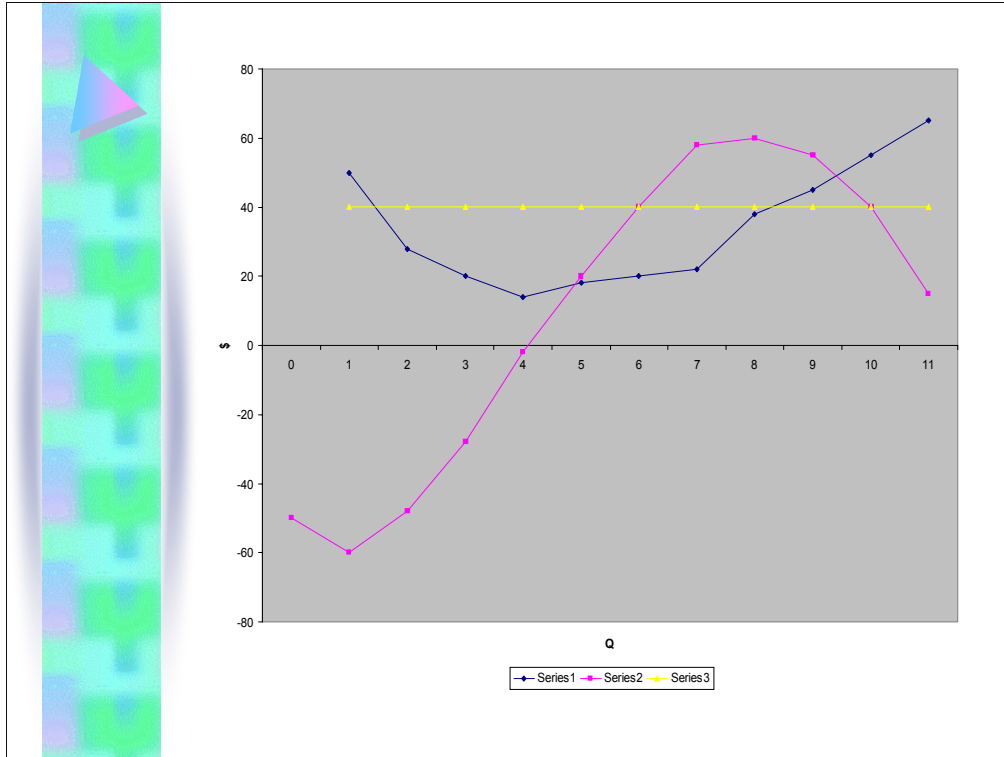
## Exercise

Output	Price	MC	TC	TR	Profit	MR
0	40		50			
1	40	50				
2	40	28				
3	40	20				
4	40	14				
5	40	18				
6	40	20				
7	40	22				
8	40	38				
9	40	45				
10	40	55				



Output	Price	MC	TC	TR	Profit	MR
0	40		50	0	-50	
1	40	50	100	40	-60	40
2	40	28	128	80	-48	40
3	40	20	148	120	-28	40
4	40	14	162	160	-2	40
5	40	18	180	200	20	40
6	40	20	200	240	40	40
7	40	22	222	280	58	40
8	40	38	260	320	60	40
9	40	45	305	360	55	40
10	40	55	360	400	40	40







## Questions

- **What are those series in the previous diagram?**
- **What if the price falls from \$40 to \$35?**
- **What if the fixed cost increases from \$50 to \$100, and then to \$150?**
- **What is the relationship between a firm's optimal output and its fixed cost?**