

Econ 1101: Monopoly

Week 11

Spring 2013

Section 40

Week 11, Lectures 1 and 2

November 12, 2013

Monopoly: plan for today

- Introducing Monopolies
- Inefficiencies of monopoly
- Natural monopoly
- **Perfect price discrimination**
- **Imperfect price discrimination**

4. Perfect Price Discrimination

- Introducing Monopolies
- Inefficiencies of monopoly
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- Imperfect price discrimination

Perfect Discrimination (intro)

- So far we have assumed that firms can only charge one price per unit (ie same price to all consumers that buy the product), this is known as **uniform pricing**.
- In reality, monopolists might be able to charge different prices (for different type of consumers): **price discrimination**
 - For example museums and movie theaters charge a discounted price to students and seniors, everyone else pays a higher price.
- The extreme case of price discrimination is **perfect price discrimination**, where the monopolist can differentiate every single person's type.
 - The monopolist will now each person's reservation price
 - And profit maximizing behavior implies **charging everyone their reservation price**.

Perfect Price Discrimination

Uniform pricing: all pay the same price per unit.

Perfect Price Discrimination: monopolist charges everyone their reservation price.

Example in Econland: charging everyone their reservation price:

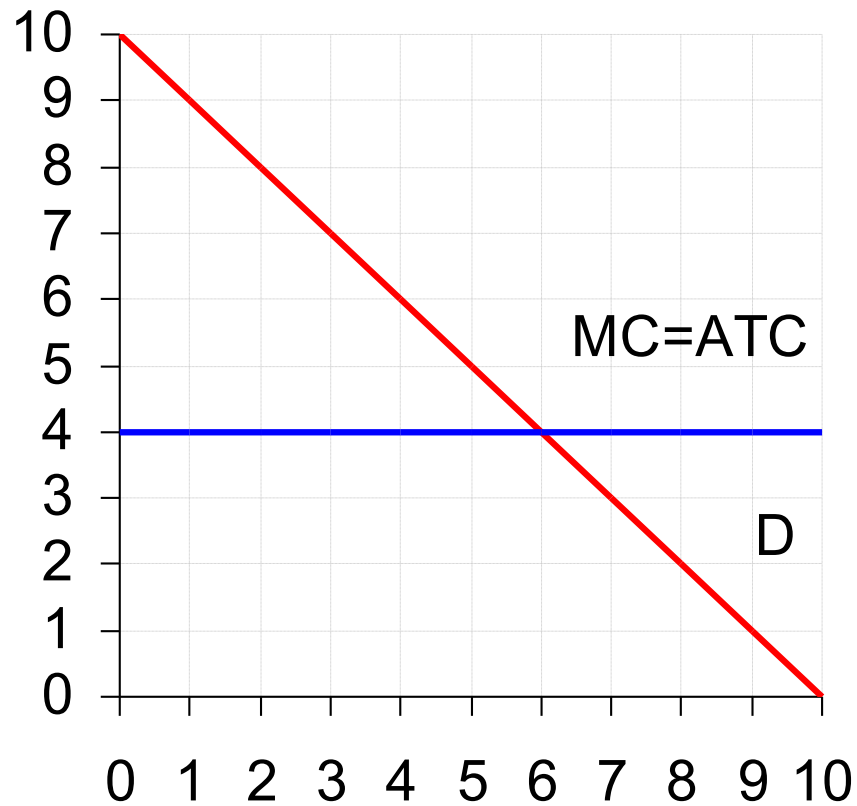
D1 would pay 9

D2 would pay 8, etc.

Now marginal revenue is the price paid: (ie price in D curve)

- When S4 sells the next unit his revenue will increase by the new price he charges to the new consumer (can double check this) **So $MR=D$**

Graphically:





Extracts all consumer surplus!

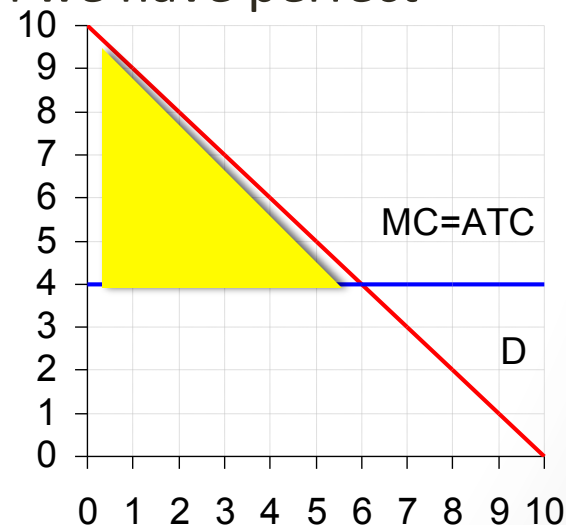
Efficiency and welfare analysis

What about efficiency with perfect price discrimination?

- Since $MR=MB$ we no longer violate efficient principle 3
- Now monopolist gets all the surplus, it maximizes the surplus!, notice this equilibrium is actually efficient

What is the difference when there is a monopolist who can perfectly price discriminate and when we have perfect competition?

- With perfect comp CS 
- With monopoly PS 



5. Imperfect price discrimination

- Introducing Monopolies
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Imperfect Price Discrimination

- This is a **more likely case**: where the monopolist can discriminate among groups of people

Back to econland:

With uniform pricing, S4 sets $P = 7$

- $Q = 3$ (sells to D1, D2, D3)

One day S4 notices:

- D1, D2, D3 all happen to be 30 years old
- **D4, D5, D6, all senior citizens.**

Brilliant idea!

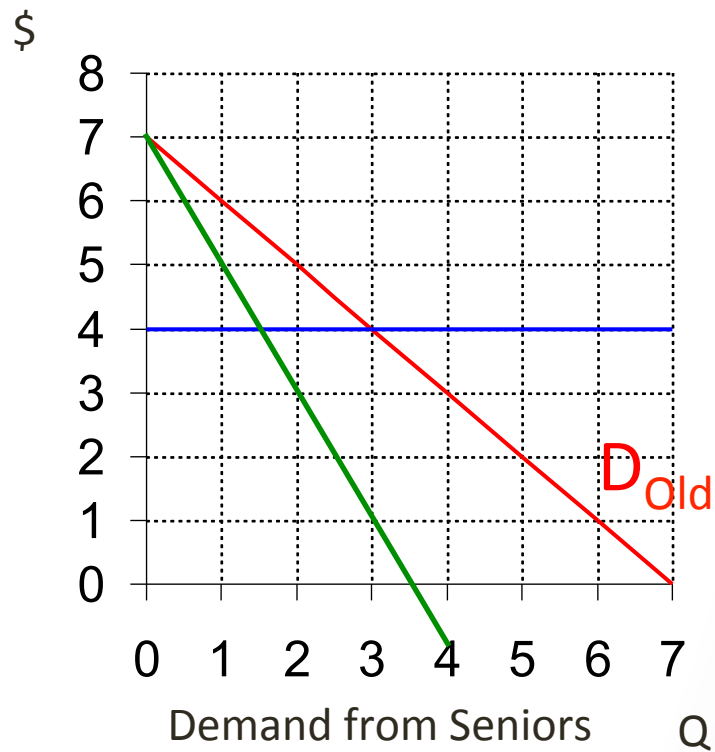
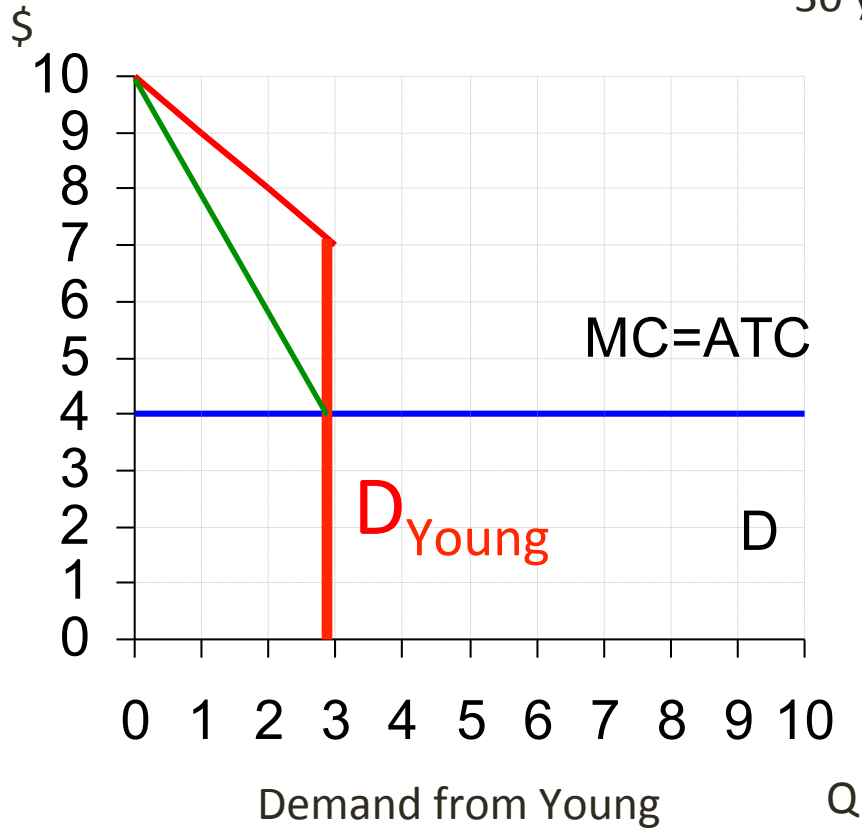
- **Senior citizen discount**

How does it work?

- Set $P = \$7$ as regular price.
- Sell $Q = 3$ at regular price.

Two segmented markets

To get demand in senior market, chop off first three units of the demand curve (these are the 30 year olds) then get MR



Outcome and profits

In the senior market, $MC=MR$ when **quantity is 1.5**

Price to seniors: \$5.50

$$\begin{aligned}\text{Profit on seniors:} &= (P - ATC) * Q \\ &= (5.5 - 4) * 1.5 = 2.25\end{aligned}$$

Profit in regular market (selling to the young) = \$9 (just like before)

Total profit (adding profit on seniors) is $9 + 2.25 = 11.25$

Welfare Changes

Who wins, who loses when firm can price discriminate?

1. Firm **wins**.
2. Seniors **win**.
3. Young people here don't care. Pay \$7 either way.
 - The fact they did well is just because of the example
 - But can change the numbers so they pay more (i.e. what if only D1 and D2 are 30 year olds?)
 - So possible they are worse off.

But **is it possible that they are better off?**

When IPD increase welfare

The people paying high price can benefit from price discrimination if the product would not exist otherwise.

- Suppose have a fixed cost of \$10.

Uniform pricing:

Profit is \$9 with no fixed cost

Subtract the fixed cost of \$10

Profit after fixed cost = -\$1

There is a loss, so the firm will **exit** (and not produce anything)

Price Discrimination

Profit is \$11.25 with no fixed cost

Subtract the fixed cost of \$10

Profit after fixed cost = \$1.25

There is profit, so the firm **will stay in and produce**

Problems of IPD

A major issue that firms practicing price discrimination need to deal with is how to keep the markets separate.

People paying the high price will try to figure out how to pay the low price.

Example: Americans buying drugs in Canada.

- This is Americans jumping out of their intended market

- Ability to practice **price discrimination can make the allocation more efficient:**
- Expansion of output in markets where marginal benefit $>$ marginal cost
- Can possibly even benefit people who pay the high prices if the product would not exist without price discrimination (because the firm might otherwise not be able to capture enough revenue to pay fixed cost).
- But....

Problems IPD example airlines

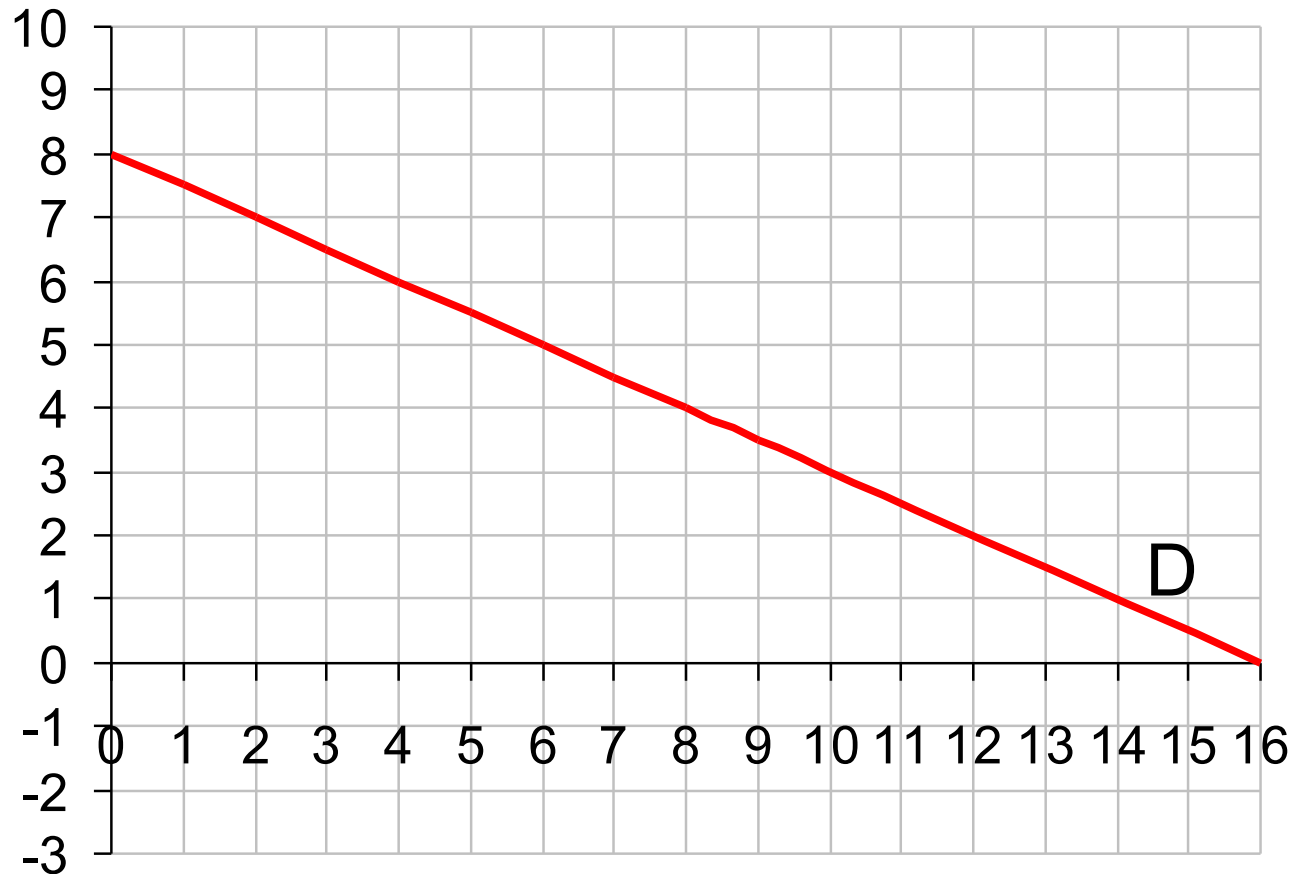
- Can lead to inefficiencies as firms add restrictions to keep markets separate.
- For example, airlines sometimes require a **Saturday stayover** to get a cheap fare. Of course a traveler staying over a Saturday does nothing to reduce the cost to the airline of serving the customer. What this restriction can do is help separate the business travel market from the personal travel market.

One more example: test your knowledge

One more example: Coupons

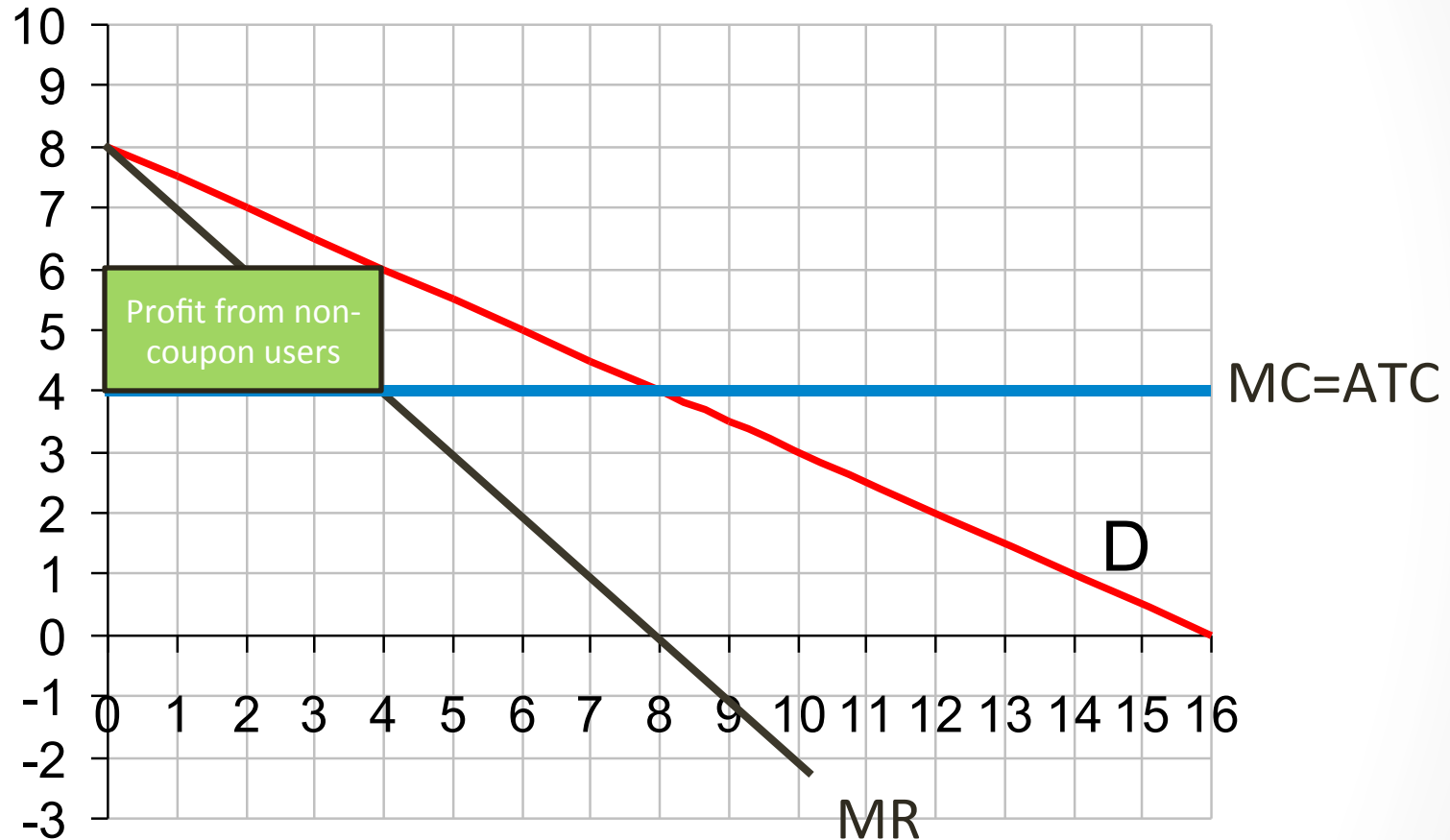
Suppose monopolist in EconLand wants to make more profit than the uniform-price monopolist profit

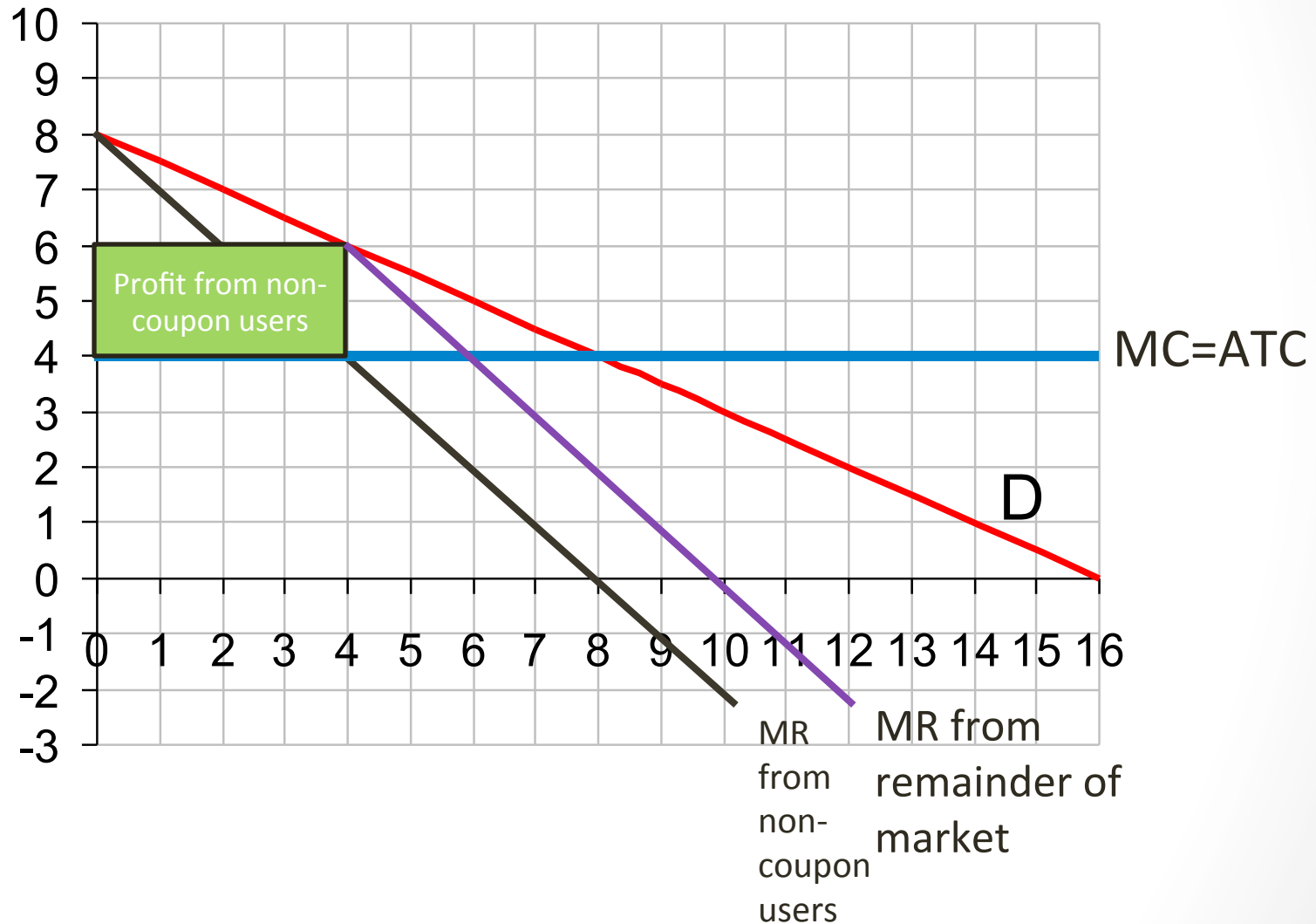
Faced with $MC=ATC=4$

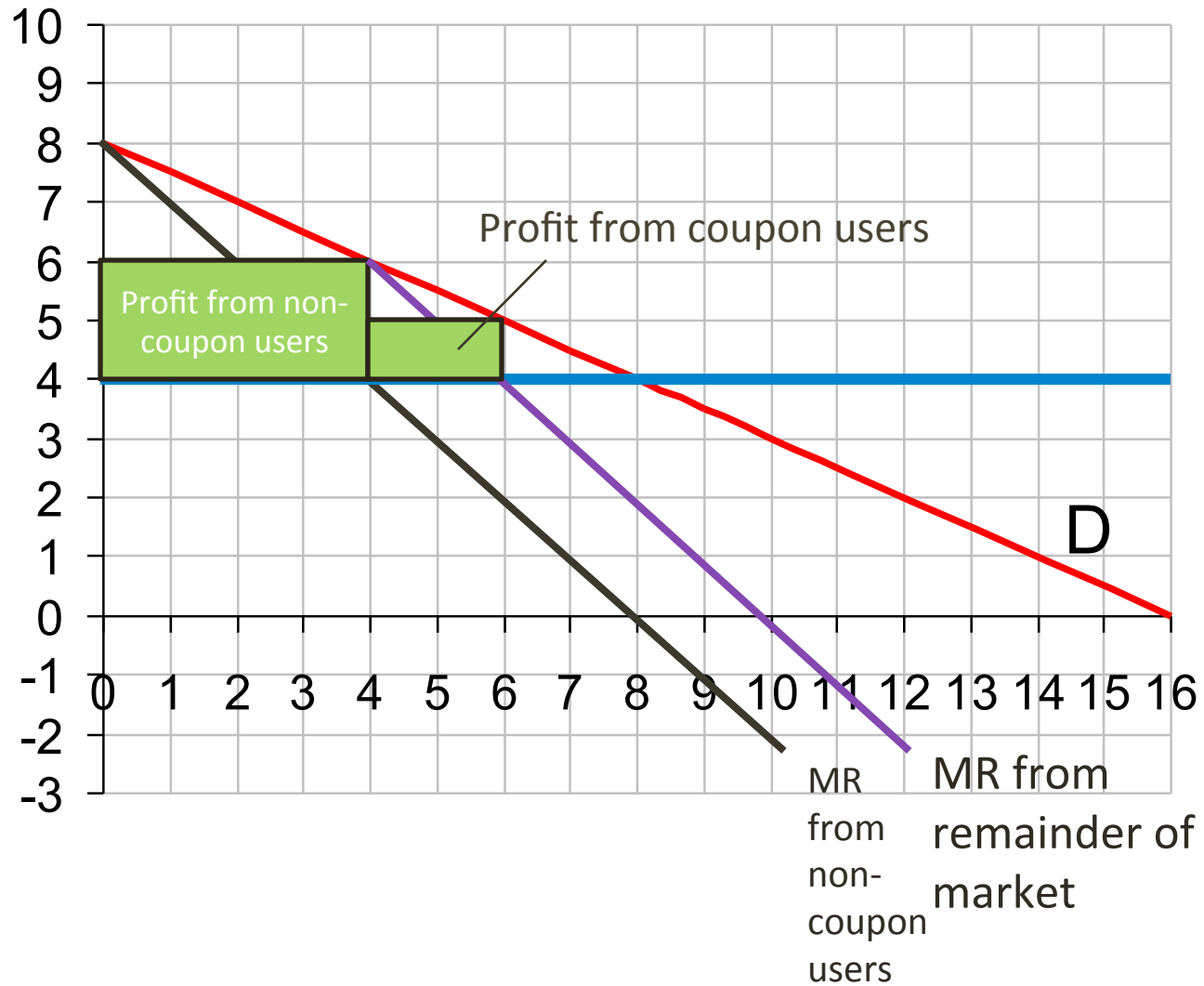


Uniform price monopolist profit:
 $MR=MC=4$: $Q=4$, $P=6$ profit = 8

Segmenting the market:







A few things:

- How might a monopolist offering coupons segment the market? Do they leave coupons hanging out with the product, so that it is easy to get?
- How would the firm keep the market segmented? (Have you ever tried saying “I have a coupon, but I just forgot to bring it” ... what is the usual response?)
- As a consumer, how can you “mess it up” for the firm? (Even if your reservation price is \$7.50, would you want to buy something for \$6 or \$5?)

Notes:

- This lecture notes cover lec 12(ii) and 12(iii) from moodle website.
- We will work mainly in the whiteboard (take notes)