Price Discrimination

AP Microeconomics | Unit 4 | conditions, profit, and perfect price discrimination

1. What it is, and what it needs

Price discrimination

Charging different buyers different prices for the **same** good, when the difference is not explained by a difference in cost.

It works only if the firm

1. has **market power** (it sets its own price);
2. can **tell buyers apart** by their willingness to pay (student card, age, booking date);
3. can **prevent resale** between the groups.

2. Why two prices beat one

Example. 100 adults will pay up to \$15, 100 students up to \$9; each seat costs \$3.

pricing	tickets sold	profit
one price: \$15	100	$100 \times \$12 = \$1{,}200$
one price: \$9	200	$200 \times \$6 = \$1{,}200$
adults \$15, students \$9	200	$\$1{,}200 + \$600 = \$1{,}800$

Each group is charged closer to what it is willing to pay, so consumer surplus turns into profit.

3. Perfect price discrimination

Every buyer is charged exactly the most they are willing to pay.

Perfect (first-degree) price discrimination

- Selling one more unit no longer lowers the price of the others, so $\boldsymbol{MR = D}$.
- The firm produces where $MR = MC$, that is, where $D = MC$: the **efficient quantity**.
- **Deadweight loss is zero.**
- **Consumer surplus is zero**: the whole area between demand and MC goes to the firm.

4. Good or bad?

With demand $P = 12 - Q$ and $MC = Q$:

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	single-price monopoly	perfect price discrimination
quantity	4	6
consumer surplus	\$8	\$0
producer surplus	\$24	\$36
deadweight loss	\$4	\$0

More *efficient* (total surplus is at its maximum), and worse for *consumers* (all of the surplus goes to the firm). Efficiency and fairness are separate questions.

5. Elasticity, and the last unit

In elasticity terms, the groups must have different price elasticities of demand, and the higher price goes to the group whose demand is *less* elastic (business travelers, adults at a premiere); the group with more elastic demand (students, vacationers: tight budgets, many alternatives) gets the lower price.

Under perfect price discrimination each unit sells at that buyer's maximum willingness to pay, and the firm keeps selling until price falls to marginal cost, so the last unit sells at $P = MC$: with $D : P = 12 - Q$ and $MC = Q$, the last unit is $Q = 6$ at \$6. If MC rises by \$2 at every quantity, output falls to $Q = 5$ and the last unit sells at the new MC, \$7.

Where students lose points

1. Saying perfect price discrimination creates deadweight loss: it removes it.
2. Drawing MR below demand for a perfectly discriminating monopolist.
3. Leaving some consumer surplus: it is zero.
4. Forgetting a condition: market power, telling buyers apart, no resale.
5. Calling a cost-based price difference "price discrimination".

Now practise it

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