

CHAPTER 7

**CONSUMERS, PRODUCERS AND EFFICIENCY OF
MARKET**

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Welfare Economics

- Recall, the **allocation of resources** refers to:
 - how much of each good is produced
 - which producers produce it
 - which consumers consume it
- **Welfare economics** studies how the allocation of resources affects economic well-being.
- First, we look at the well-being of consumers.

Willingness to Pay (WTP)

A buyer's **willingness to pay** for a good is the maximum amount the buyer will pay for that good. WTP measures how much the buyer values the good.

<i>name</i>	<i>WTP</i>
Anthony	\$250
Chad	175
Flea	300
John	125

Example:
4 buyers' WTP
for an iPod

WTP and the Demand Curve

Q: If price of iPod is \$200, who will buy an iPod, and what is quantity demanded?

A: Anthony & Flea will buy an iPod, Chad & John will not.

Hence, $Q^d = 2$
when $P = \$200$.

<i>name</i>	<i>WTP</i>
Anthony	\$250
Chad	175
Flea	300
John	125

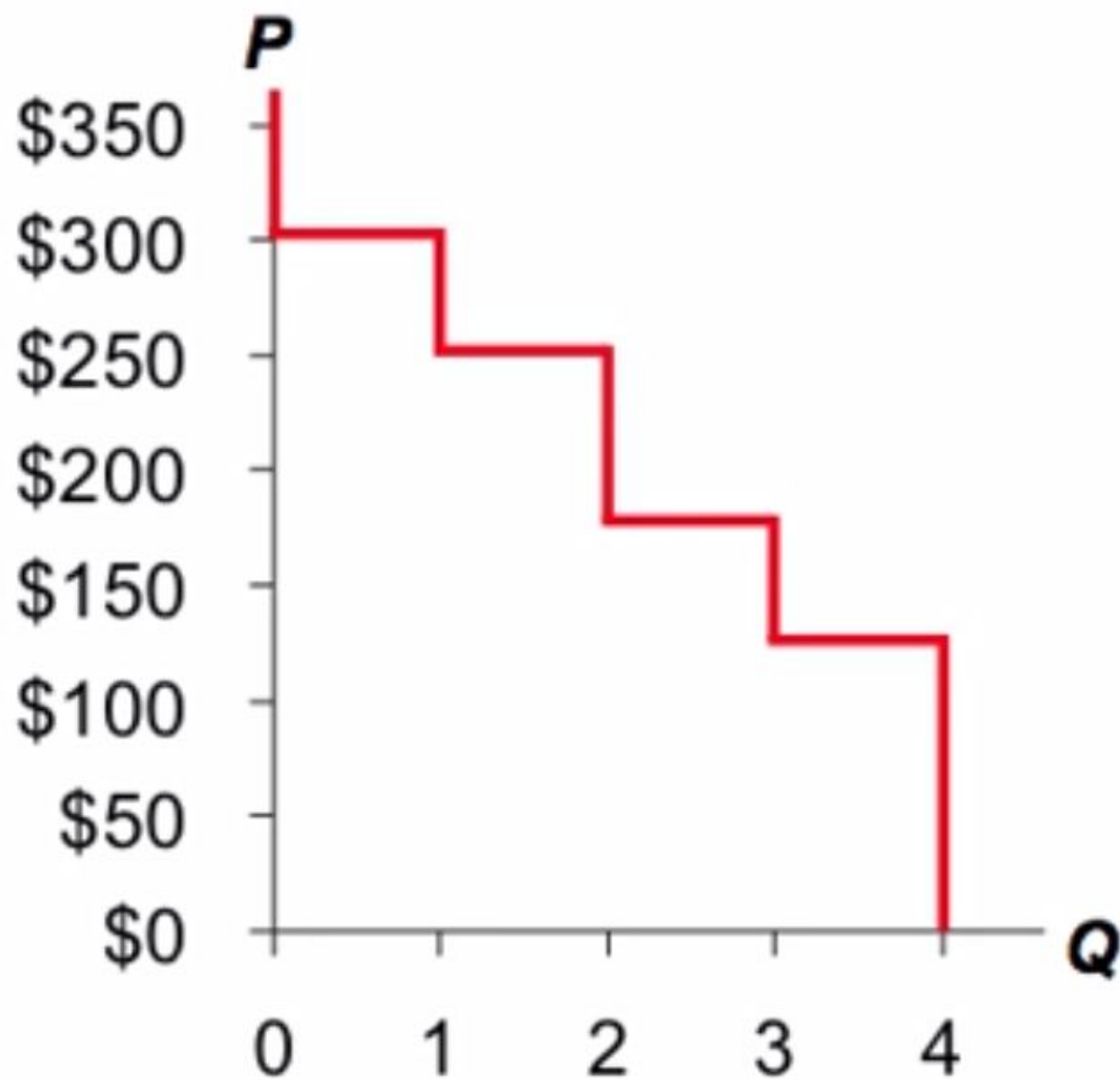
WTP and the Demand Curve

Derive the demand schedule:

<i>name</i>	<i>WTP</i>
Anthony	\$250
Chad	175
Flea	300
John	125

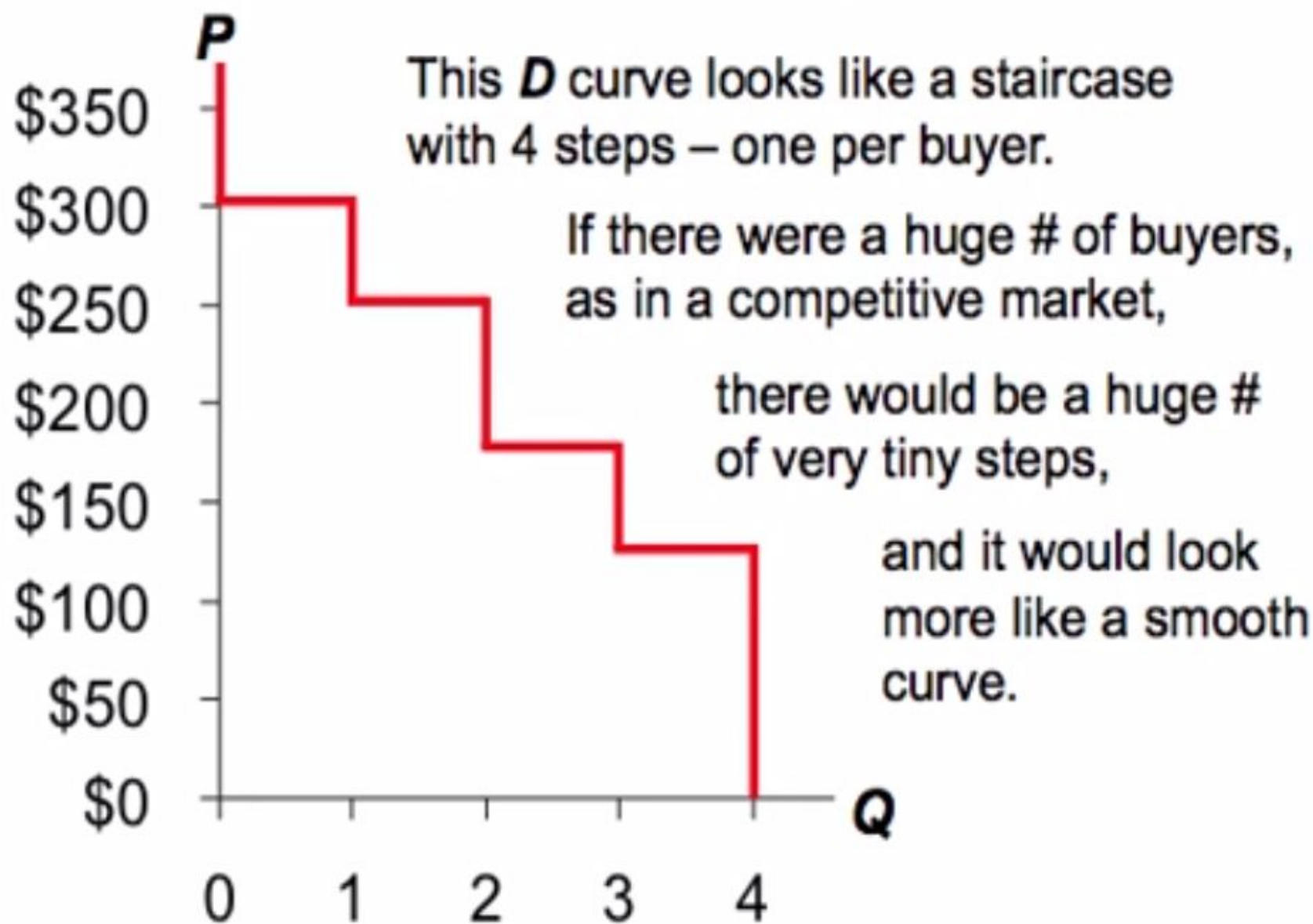
<i>P</i> (price of iPod)	who buys	Q^d
\$301 & up	nobody	0
251 – 300	Flea	1
176 – 250	Anthony, Flea	2
126 – 175	Chad, Anthony, Flea	3
0 – 125	John, Chad, Anthony, Flea	4

WTP and the Demand Curve

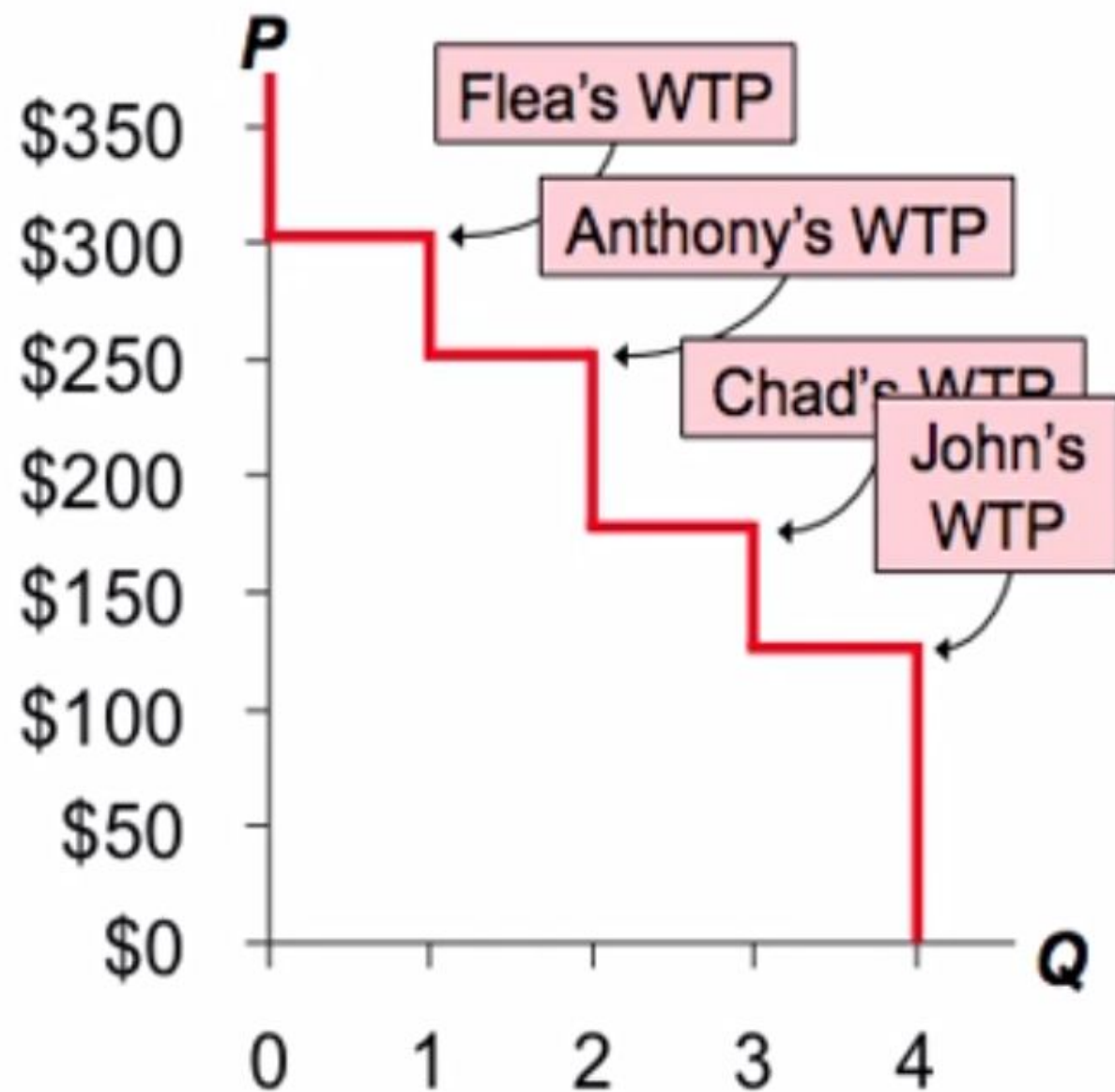


P	Q^d
\$301 & up	0
251 – 300	1
176 – 250	2
126 – 175	3
0 – 125	4

About the Staircase Shape...



WTP and the Demand Curve



At any Q , the height of the D curve is the WTP of the **marginal buyer**, the buyer who would leave the market if P were any higher.

Consumer Surplus (CS)

Consumer surplus is the amount a buyer is willing to pay minus the amount the buyer actually pays:

$$CS = WTP - P$$

<i>name</i>	<i>WTP</i>
Anthony	\$250
Chad	175
Flea	300
John	125

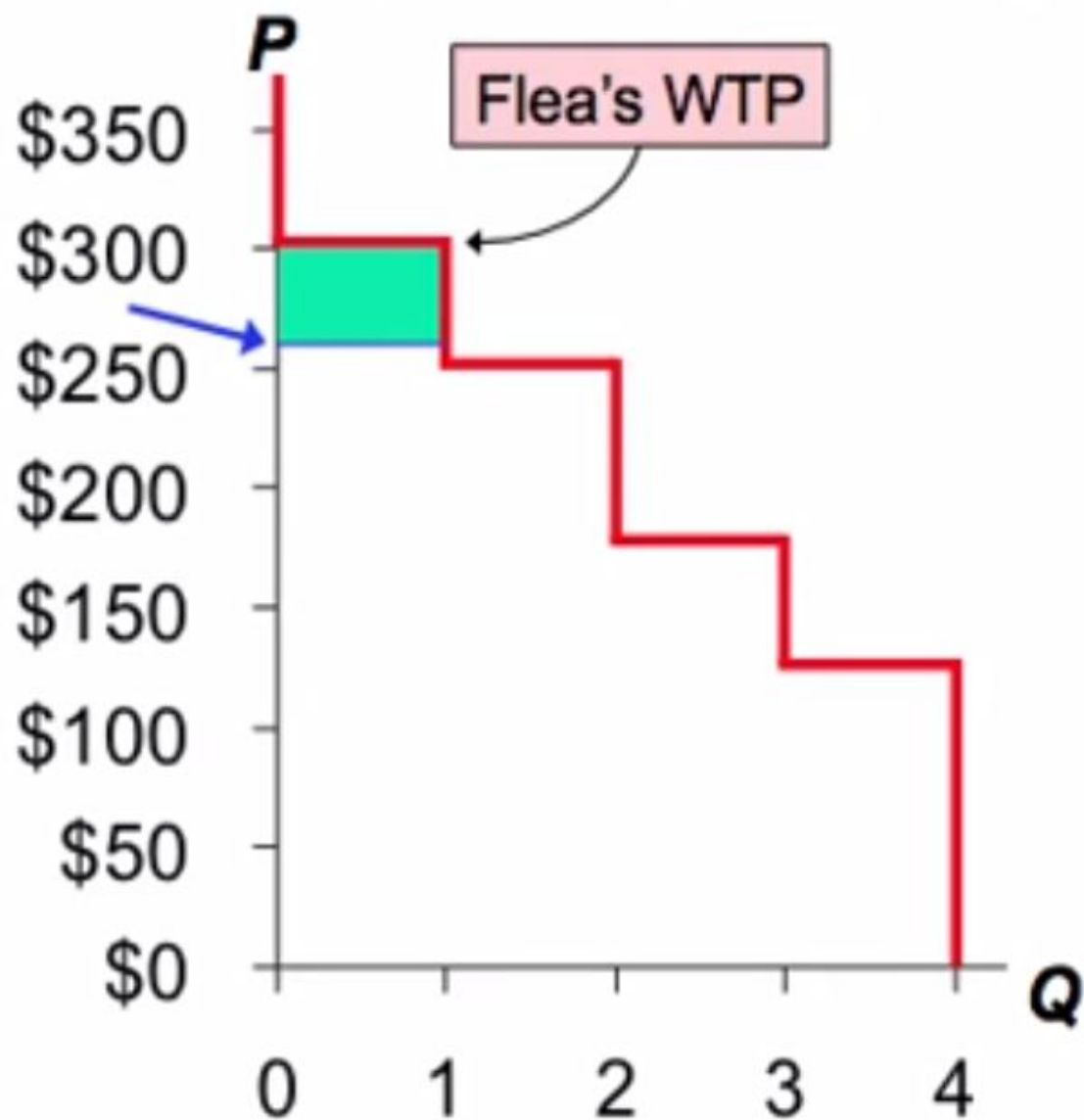
Suppose $P = \$260$.

Flea's CS = $\$300 - 260 = \40 .

The others get no CS because they do not buy an iPod at this price.

Total CS = $\$40$.

CS and the Demand Curve

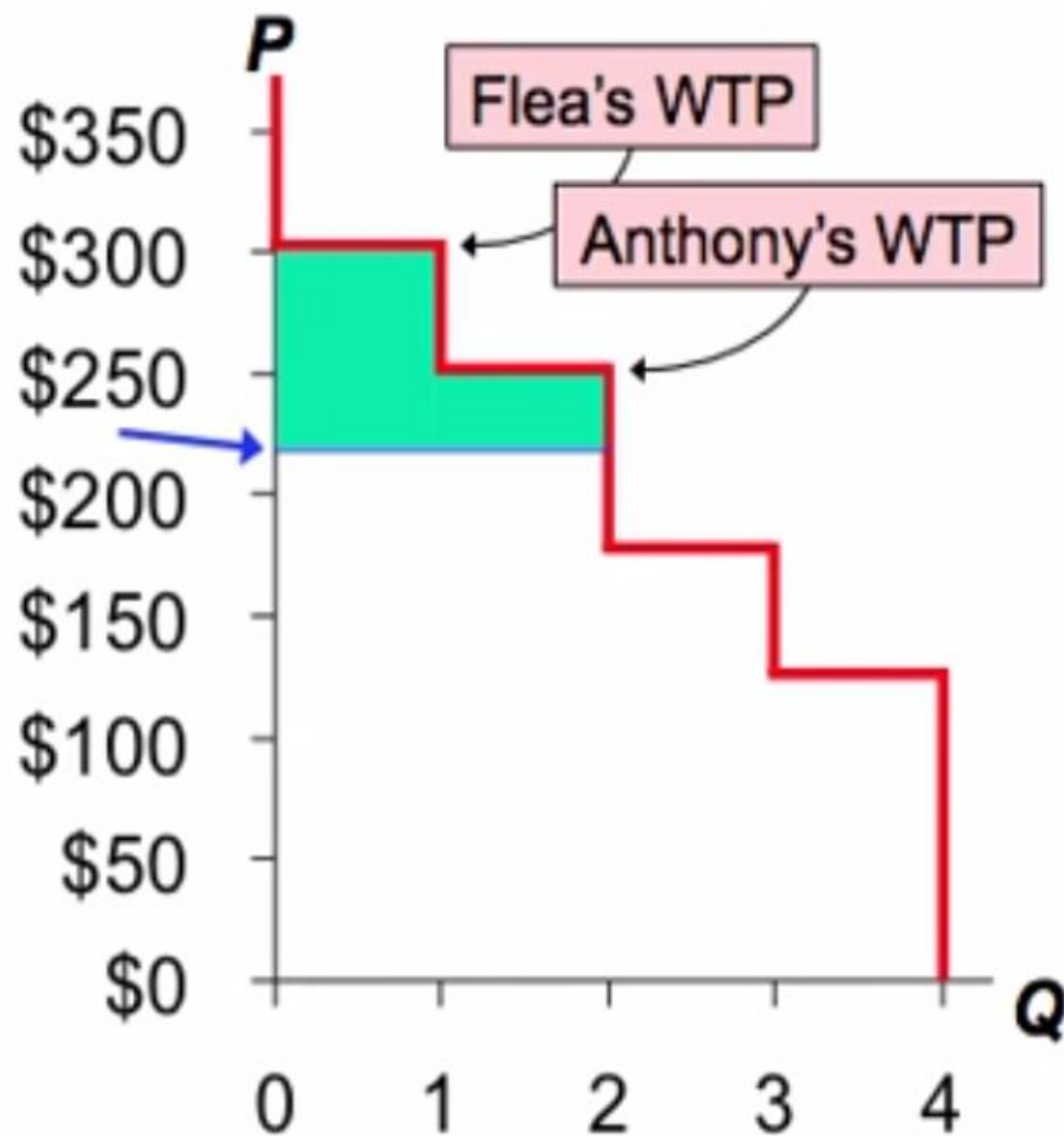


$$P = \$260$$

$$\text{Flea's CS} = \\ \$300 - 260 = \underline{\$40}$$

$$\text{Total CS} = \underline{\$40}$$

CS and the Demand Curve



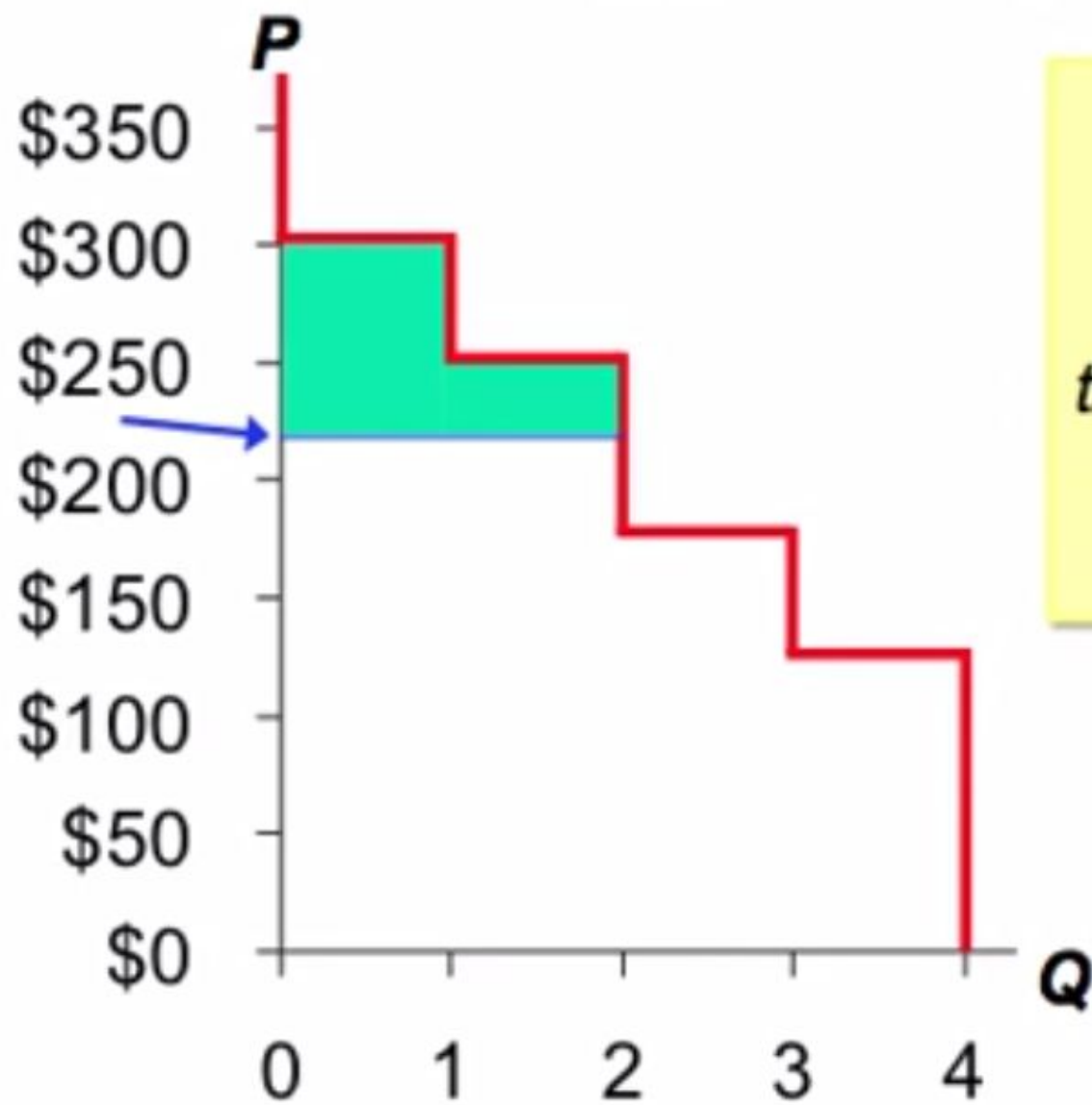
Instead, suppose
 $P = \$220$

Flea's CS =
 $\$300 - 220 = \underline{\$80}$

Anthony's CS =
 $\$250 - 220 = \underline{\$30}$

Total CS = \$110

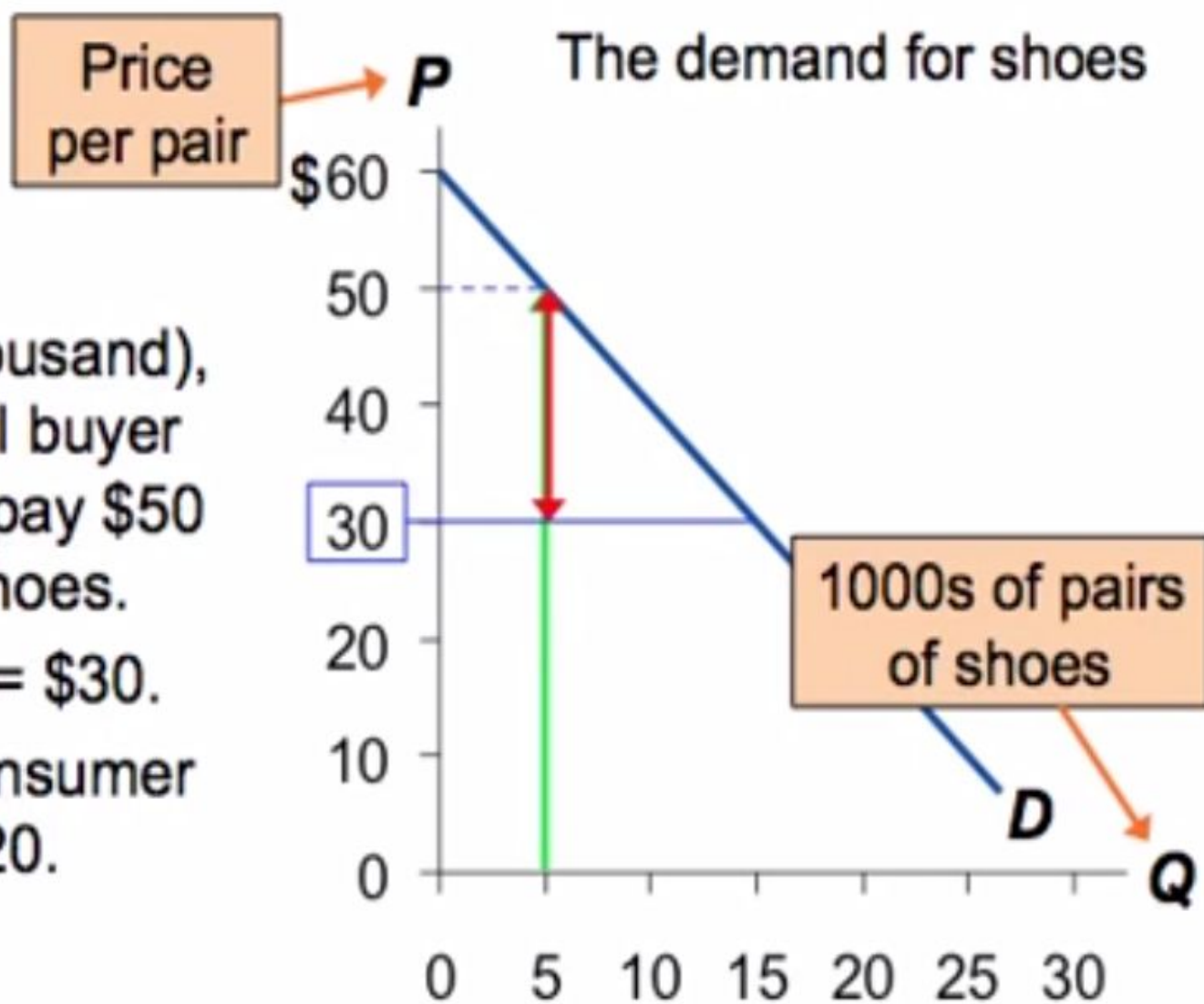
CS and the Demand Curve



*The lesson:
Total CS equals
the area under
the demand curve
above the price,
from 0 to Q.*

CS with Lots of Buyers & a Smooth D Curve

At $Q = 5$ (thousand), the marginal buyer is willing to pay \$50 for pair of shoes. Suppose $P = \$30$. Then his consumer surplus = \$20.



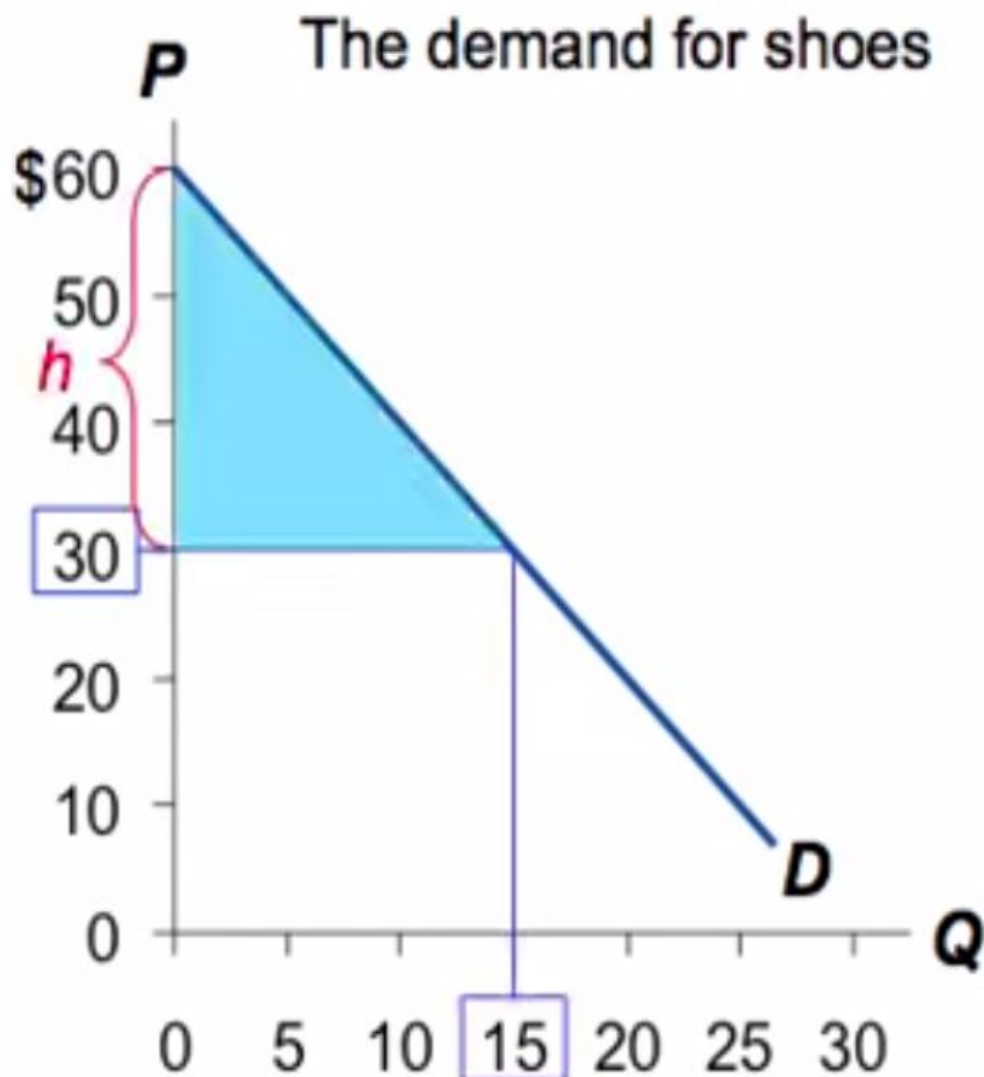
CS with Lots of Buyers & a Smooth D Curve

CS is the area b/w P and the D curve, from 0 to Q .

Recall: area of a triangle equals $\frac{1}{2} \times \text{base} \times \text{height}$

Height =
 $\$60 - 30 = \underline{\$30}$.

So,
 $CS = \frac{1}{2} \times 15 \times \30
 $= \underline{\$225}$.

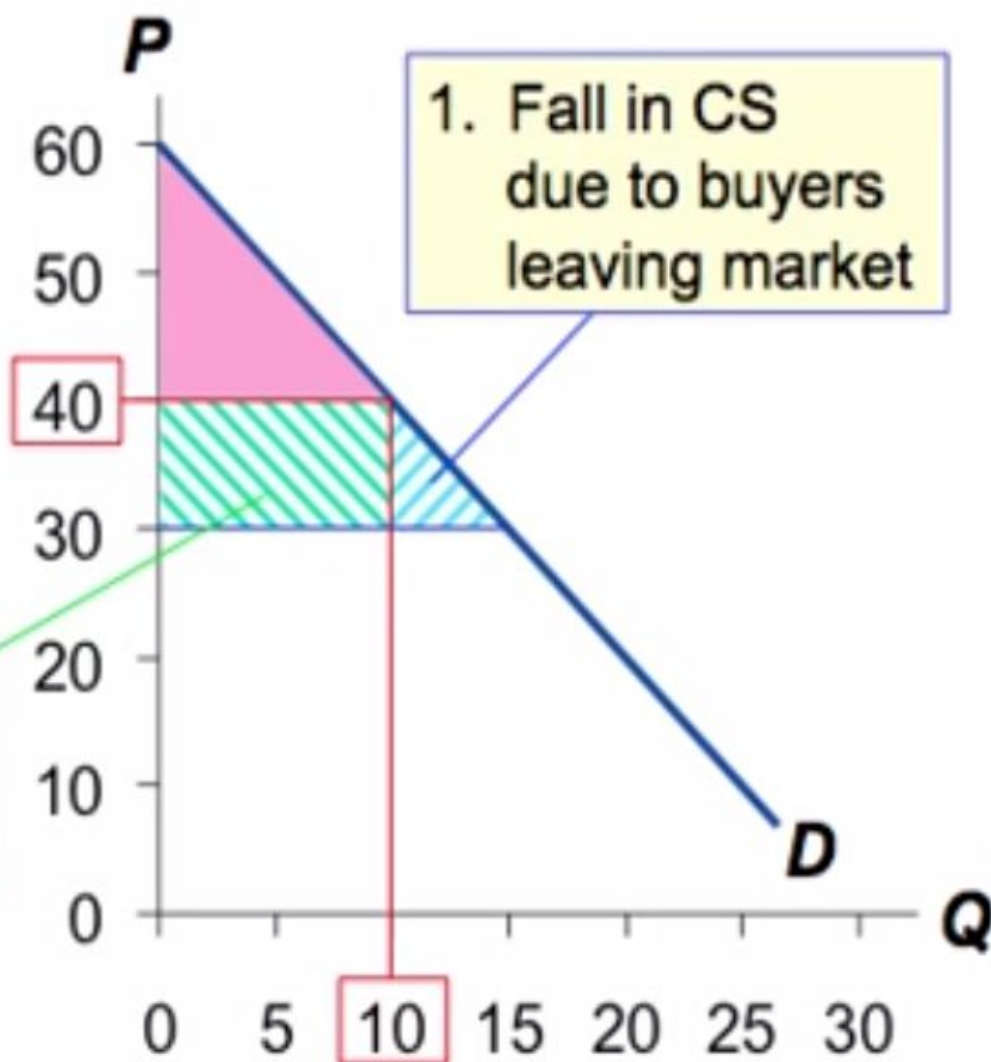


How a Higher Price Reduces CS

If P rises to \$40,

$$\begin{aligned} CS &= \frac{1}{2} \times 10 \times \$20 \\ &= \$100. \end{aligned}$$

Two reasons for the fall in CS.



2. Fall in CS due to remaining buyers paying higher P