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Principles of
Macroeconomics
Sixth Edition

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Consumers, Producers, and the Efficiency of Markets

Premium PowerPoint Slides by Ron Cronovich

In this chapter, look for the answers to these questions:

- What is consumer surplus? How is it related to the demand curve?
- What is producer surplus? How is it related to the supply curve?
- Do markets produce a desirable allocation of resources? Or could the market outcome be improved upon?

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**
- First, we look at the well-being of consumers.

Willingness to Pay (WTP)

A buyer's **willingness to pay** for a good

WTP measures

name	*WTP*
Anthony	$250
Chad	175
Flea	300
John	125

Example:
4 buyers' WTP
for an iPod

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WTP and the Demand Curve

Derive the demand schedule:

name	*WTP*
Anthony	$250
Chad	175
Flea	300
John	125

P (price of iPod)	who buys	Q^d
$301 & up		
251 – 300		
176 – 250		
126 – 175		
0 – 125		

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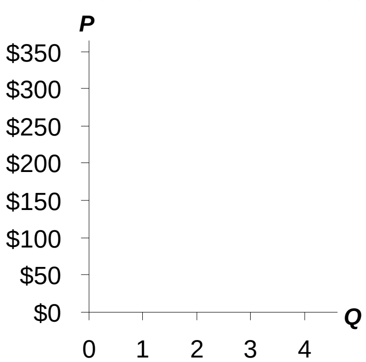
WTP and the Demand Curve



P	Q^d

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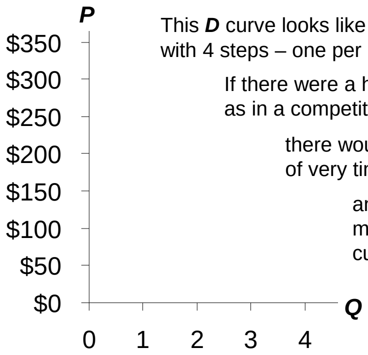
About the Staircase Shape…



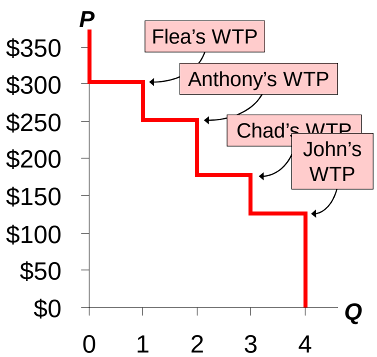
This ***D*** curve looks like a staircase with 4 steps – one per buyer.

If there were a huge # of buyers, as in a competitive market,

there would be a huge # of very tiny steps,

and it would look more like a smooth curve.

WTP and the Demand Curve



At any ***Q***, the height of the ***D*** curve is the WTP of the ***marginal buyer***,

Consumer Surplus (CS)

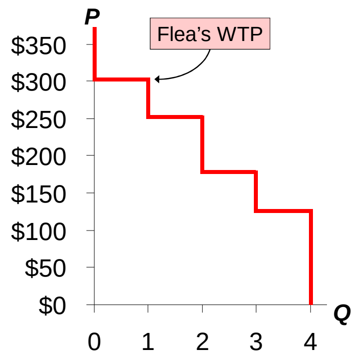
Consumer surplus

name	*WTP*
Anthony	$250
Chad	175
Flea	300
John	125

Suppose ***P*** = $260.

Flea's CS =

CS and the Demand Curve



P = $260

Flea's CS =

Total CS =

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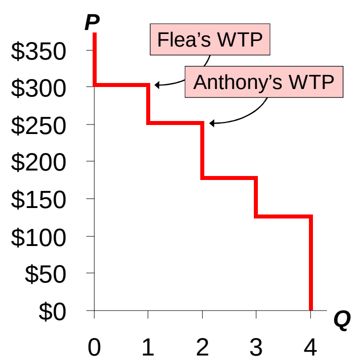
CS and the Demand Curve



Instead, suppose ***P*** = $220

Flea's CS =

Anthony's CS =

Total CS =

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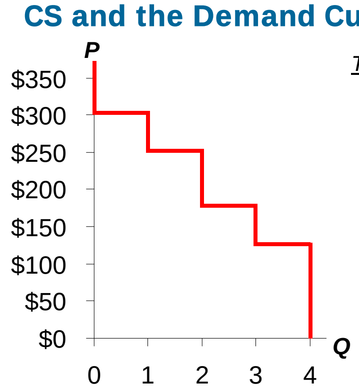
CS and the Demand Curve



The lesson:

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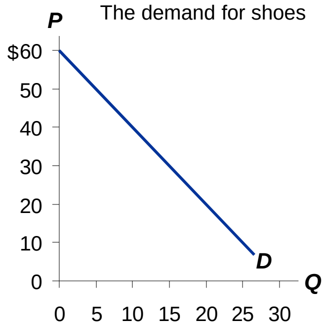
CS with Lots of Buyers & a Smooth D Curve

At ***Q*** = 5(thousand), the marginal buyer is willing to pay $________ for pair of shoes.

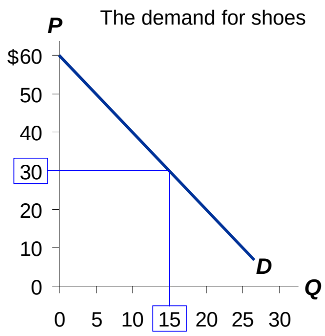
Suppose ***P*** = $30.

Then his consumer surplus = $_____.



CS with Lots of Buyers & a Smooth D Curve

Recall: area of a triangle equals ½ x base x height

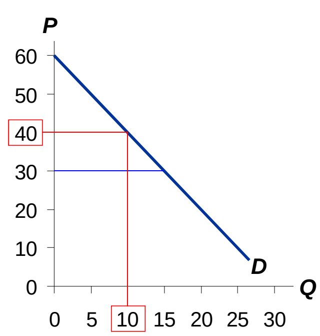


How a Higher Price Reduces CS

If ***P*** rises to $40,

CS =

Two reasons for the fall in CS.



ACTIVE LEARNING 1

Consumer surplus

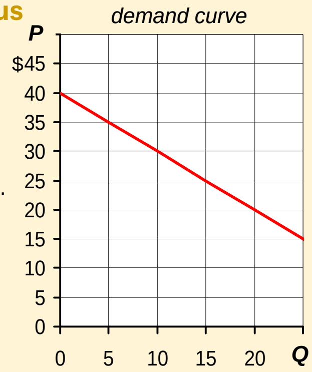
A. Find marginal buyer's WTP at ***Q*** = 10.

B. Find CS for ***P*** = $30.

Suppose ***P*** falls to $20. How much will CS increase due to…

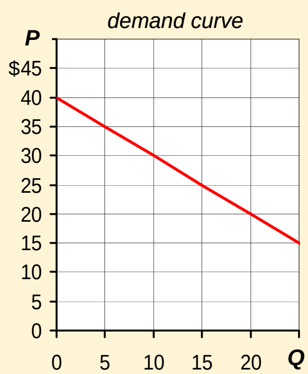
C. buyers entering the market

D. existing buyers paying lower price



ACTIVE LEARNING 1

Answers



Cost and the Supply Curve

- **Cost**

- Example: Costs of 3 sellers in the lawn-cutting business.

name	*cost*
Jack	$10
Janet	20
Chrissy	35

A seller will produce and sell the good/service only if

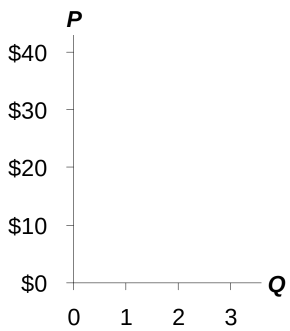
Cost and the Supply Curve

Derive the supply schedule from the cost data:

name	*cost*
Jack	$10
Janet	20
Chrissy	35

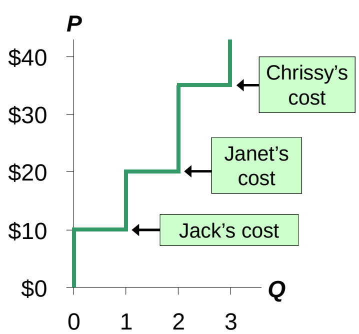
P	*Q*ˢ

Cost and the Supply Curve

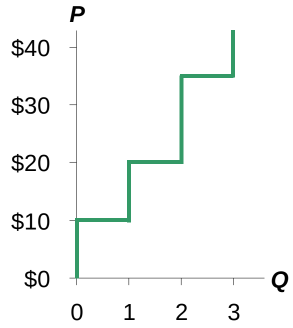


P	*Q*ˢ
$0 – 9	
10 – 19	
20 – 34	
35 & up	

Cost and the Supply Curve

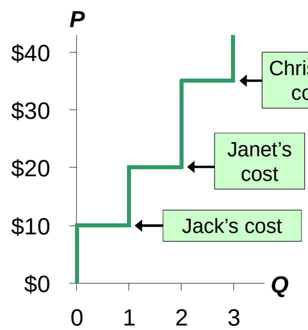


Producer Surplus



Producer surplus (PS):

Producer Surplus and the S Curve



PS = ***P*** – cost

Suppose ***P*** = $25.

Jack's PS =

Janet's PS =

Chrissy's PS =

Total PS =

Total PS equals

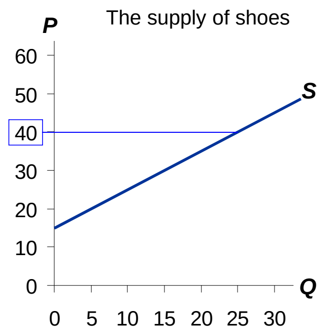
PS with Lots of Sellers & a Smooth S Curve

Suppose ***P*** = $40.

At ***Q*** = 15(thousand), the marginal seller's cost is $__________

and her producer surplus is $________.

The supply of shoes

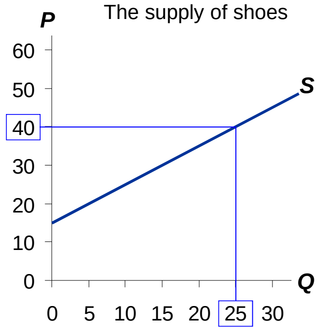


PS with Lots of Sellers & a Smooth S Curve

PS is the area b/w

The height of this triangle is

So,
PS = ½ x *b* x *h*
=



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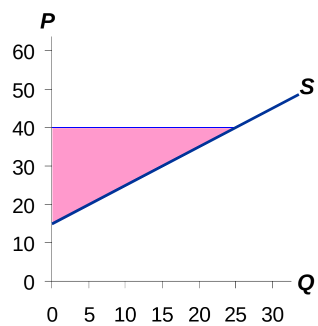
How a Lower Price Reduces PS

If ***P*** falls to $30,
PS =

Two reasons for the fall in PS.



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ACTIVE LEARNING 2

Producer surplus

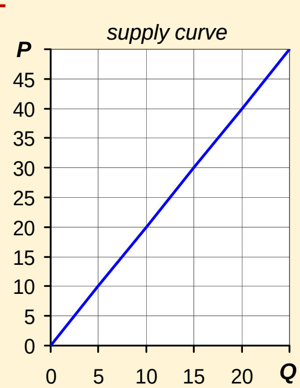
A. Find marginal seller's cost at ***Q*** = 10.

B. Find total PS for ***P*** = $20.

Suppose ***P*** rises to $30. Find the increase in PS due to:

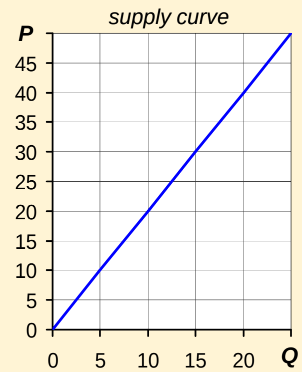
C. selling 5 additional units

D. getting a higher price on the initial 10 units



ACTIVE LEARNING 2

Answers



CS, PS, and Total Surplus

CS =

= buyers' gains from participating in the market

PS = (amount received by sellers) – (cost to sellers)

=

Total surplus =

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The Market's Allocation of Resources

- In a market economy, the allocation of resources is decentralized, determined by the interactions of many self-interested buyers and sellers.
- Is the market's allocation of resources desirable? Or would a different allocation of resources make society better off?
- To answer this,

(Policymakers also care about *equality*, though our focus here is on efficiency.)

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Efficiency

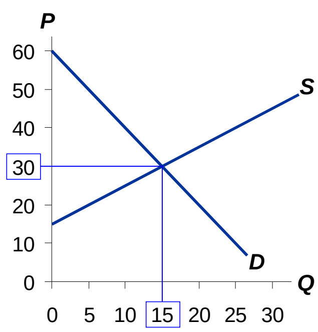
Total surplus = (value to buyers) – (cost to sellers)

An allocation of resources is **efficient** if

Efficiency means:

Evaluating the Market Equilibrium

Market eq'm:
P = $30
Q = 15,000



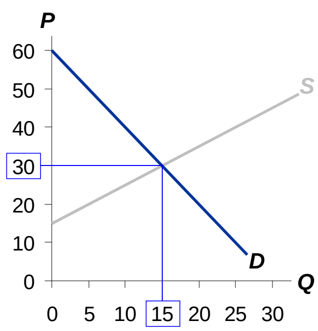
Is the market eq'm efficient?

Which Buyers Consume the Good?

Every buyer whose WTP is

Every buyer whose WTP is

So,

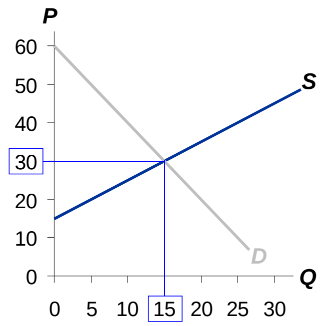


Which Sellers Produce the Good?

Every seller whose

Every seller whose

So,



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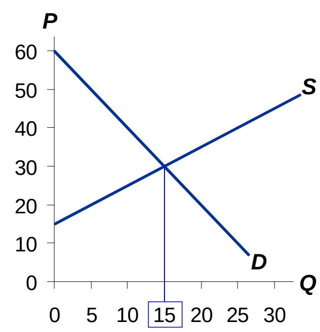
Does Eq'm *Q* Maximize Total Surplus?

At ***Q*** = 20,
cost of producing the marginal unit is $_____

value to consumers of the marginal unit is only $_____

Hence, can increase total surplus by ______________.

This is true at any ***Q*** *greater than 15.*



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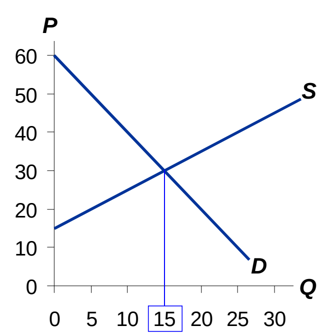
Does Eq'm *Q* Maximize Total Surplus?

At ***Q*** = 10,
cost of producing the marginal unit is $_____

value to consumers of the marginal unit is $_____

Hence, can increase total surplus by ______________.

This is true at any ***Q*** *less than 15.*



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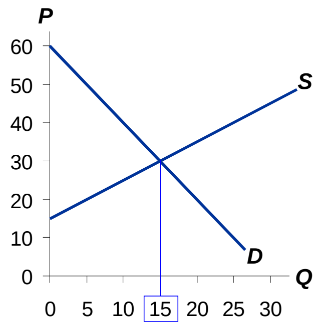
Does Eq'm *Q* Maximize Total Surplus?

The market eq'm quantity



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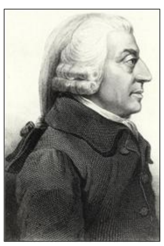
Adam Smith and the Invisible Hand

Passages from *The Wealth of Nations*, 1776



Adam Smith, 1723-1790

"Man has almost constant occasion for the help of his brethren, and it is vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favor, and show them that it is for their own advantage to do for him what he requires of them…
It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest.…

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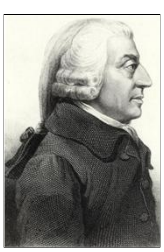
Adam Smith and the Invisible Hand

Passages from *The Wealth of Nations*, 1776



Adam Smith, 1723-1790

"Every individual…neither intends to promote the public interest, nor knows how much he is promoting it.…
He intends only his own gain, and he is in this, as in many other cases, led by **an invisible hand** to promote an end which was no part of his intention.
Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it."

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The Free Market vs. Govt Intervention

- The market equilibrium is efficient. No other outcome achieves higher total surplus.
- Govt cannot raise total surplus by changing the market's allocation of resources.
-

  (French for "allow them to do"): the notion that

The Free Market vs. Central Planning

- Suppose resources were allocated not by the market, but by a central planner who cares about society's well-being.
- To allocate resources efficiently and maximize total surplus, the planner would need to know
- This is impossible, and why centrally-planned economies are never very efficient.

CONCLUSION

- This chapter used welfare economics to demonstrate one of the Ten Principles:

  Markets are usually a good way to organize economic activity.
- Important note:
  We derived these lessons assuming perfectly competitive markets.
- In other conditions we will study in later chapters, the market may fail to allocate resources efficiently…

CONCLUSION

- Such market failures occur when:
  - a buyer or seller has *market power*—the ability to affect the market price.
  - transactions have side effects, called *externalities*, that affect bystanders. (example: pollution)
- We'll use welfare economics to see how public policy may improve on the market outcome in such cases.
- Despite the possibility of market failure, the analysis in this chapter applies in many markets, and the invisible hand remains extremely important.