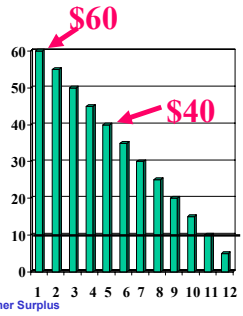
Consumer Surplus

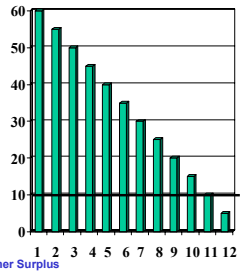
The Basic Concept

- A consumer gets benefit from each unit purchased.
- However each unit brings less benefit



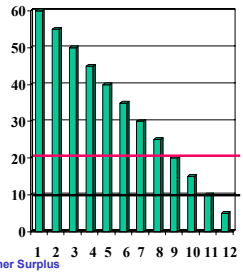
The Basic Concept

- A consumer gets benefit from each unit purchased.
- However each unit brings less benefit
- A consumer purchases until marginal benefit equals price



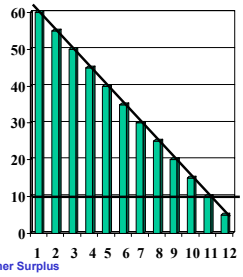
The Basic Concept

- A consumer purchases until marginal benefit equals price
- If the price rose to $20, the consumer would demand fewer units.



The Basic Concept

- Effectively we have a demand curve.



The Basic Concept

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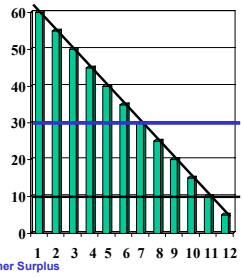
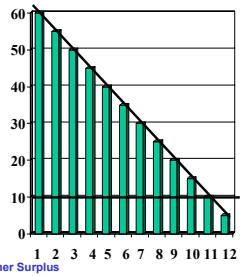


The Basic Concept

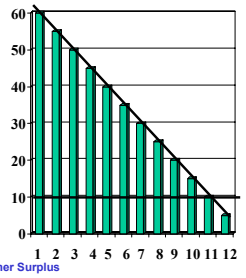
- How do we compute the total benefit or consumer surplus the consumer gets from his purchases?



The Basic Concept

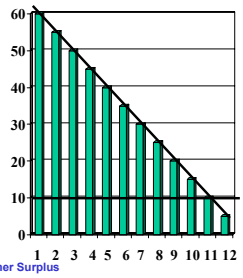
- We could sum up the benefits from each unit purchased.

$CS = 50 + 45 + \ldots$



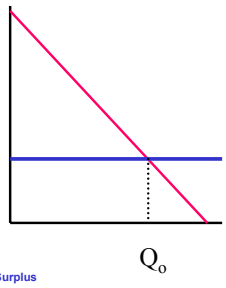
The Basic Concept

- We could sum up the benefits from each unit purchased.
- We could simply find the area under the demand curve



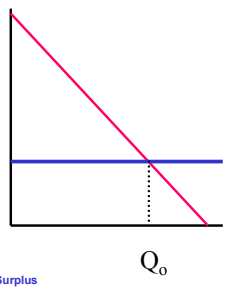
Computing Consumer Surplus

- This is the standard way of computing consumer surplus.



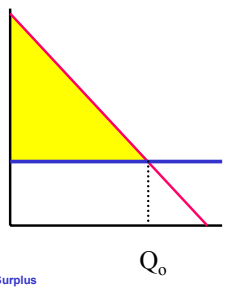
Computing Consumer Surplus

- This is the standard way of computing consumer surplus
- Look at the demand function. A consumer purchases Q_o units, to the point where MB = Price



Computing Consumer Surplus

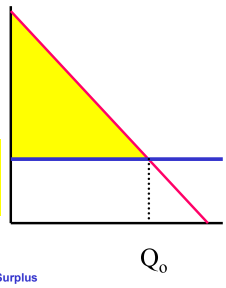
- This is the standard way of computing consumer surplus
- Look at the demand function. A consumer purchases Q_o units, to the point where MB = Price
- Consumer surplus is then the shaded area



Computing Consumer Surplus

- This computation is easy. Remember the basic formula for the area of a right triangle:

$$Area = \frac{1}{2}(Base)(Height)$$



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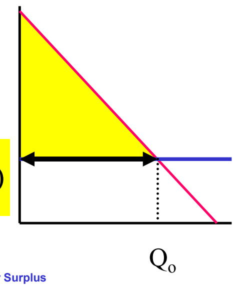

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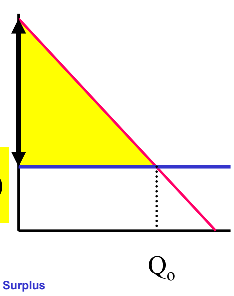
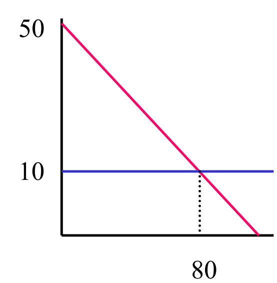


A Numerical Example

Q = 100 – 2p



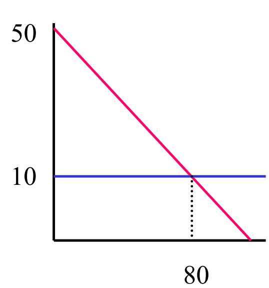
A Numerical Example

Q = 100 – 2p

When

P = 10

Q = 80



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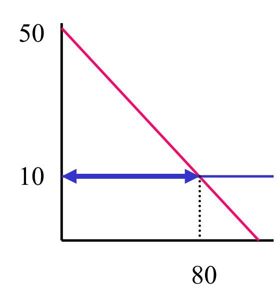


A Numerical Example

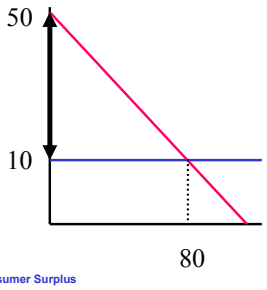
Q = 100 – 2p

When

P = 10

Q = 80

Height = 40



A Numerical Example

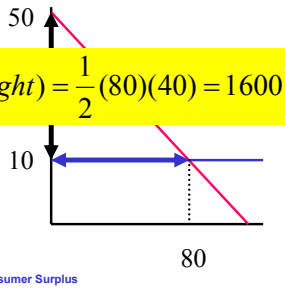
Q = 100 – 2p

When

$$Area = \frac{1}{2}(Base)(Height) = \frac{1}{2}(80)(40) = 1600$$

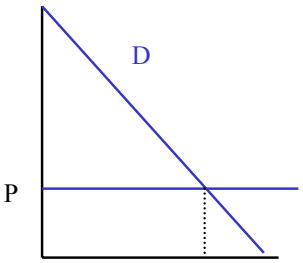
Base =80

Height = 40



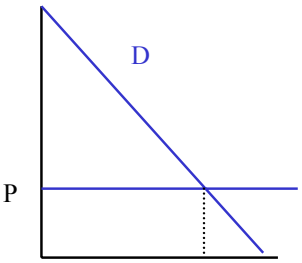
An Application

- The Demand for a particular product is shown on the graph.



An Application

- The Demand for a particular product is shown on the graph.
- The good sells for p



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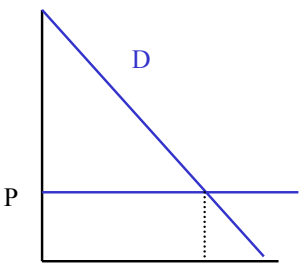

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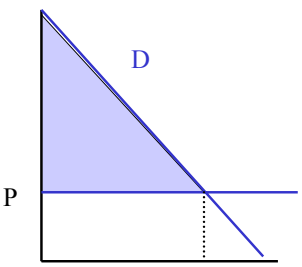
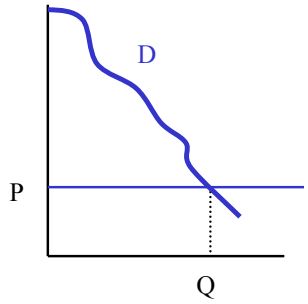


No Right Triangle?



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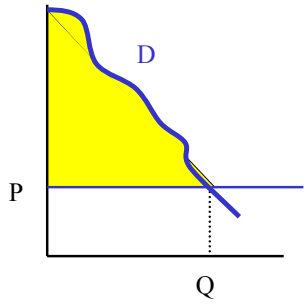
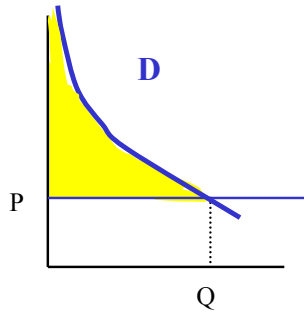


No Intersection

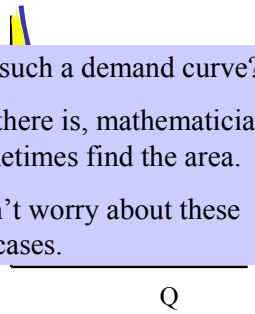


No Intersection

Is there such a demand curve?

And, if there is, mathematicians can sometimes find the area.

We won't worry about these special cases.



An Application

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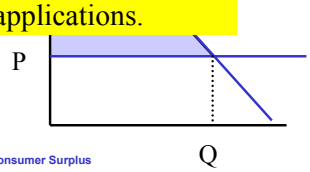
  surplus

Computing consumer surplus is simple.

It is a powerful concept, with major applications.



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