Consumer Surplus

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
• If the price rose to $20, the consumer would demand fewer units.

The Basic Concept
• Effectively we have a demand curve.

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The Basic Concept

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

### Computing Consumer Surplus

- This is the standard way of computing consumer surplus.
- Look at the demand function. A consumer purchases $Q_0$ 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:

\[ \text{Area} = \frac{1}{2} \text{(Base)}(\text{Height}) \]

A Numerical Example

\[ Q = 100 - 2p \]

When
\[ P = 10 \]
\[ Q = 80 \]
A Numerical Example

\[ Q = 100 - 2p \]

When

\[ P = 10 \]
\[ Q = 80 \]

Height = 40

\[ \text{Area} = \frac{1}{2} \times (\text{Base})(\text{Height}) = \frac{1}{2} \times 80 \times 40 = 1600 \]

Consumer Surplus

An Application

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

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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

- Computing consumer surplus is simple.
- It is a powerful concept, with major applications.

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