Class #3
Before we get started

- Find your team (a few changes)
- Get your team’s folder and handouts for each member of your team.
- Complete attendance sheet. It will be picked up at 11:15.
- Start completing your personal shower demand worksheet. Finish in breaks after you finish the iRAT & tRAT.

Today’s Tasks

1. iRAT (complete worksheet if you finish early)
2. tRAT (complete worksheet if you finish early)
3. Discussion and clarification
4. WTP: Exercises on the demand for shower minutes.

Woodward’s Shower Demand

<table>
<thead>
<tr>
<th>Price per minute</th>
<th>Minutes in the shower per week</th>
<th>Your weekly shower expense (A×B)</th>
<th>Money left for discretionary spending ($100 – C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.00</td>
<td>70</td>
<td>$0</td>
<td>$100</td>
</tr>
<tr>
<td>$0.02</td>
<td>50</td>
<td>$0.00</td>
<td>$99.98</td>
</tr>
<tr>
<td>$0.10</td>
<td>35</td>
<td>$0.50</td>
<td>$96.50</td>
</tr>
<tr>
<td>$0.25</td>
<td>21</td>
<td>$1.50</td>
<td>$98.50</td>
</tr>
<tr>
<td>$0.50</td>
<td>15</td>
<td>$3.50</td>
<td>$96.50</td>
</tr>
</tbody>
</table>
**Shower Demand**
- Choose one volunteer, and draw his or her demand curve on an empty graph.
- Put your team # at the top of the sheet.

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**Exercise #1:**
On your teammate’s demand curve

**Assume the price per minute is 50¢.**
1. Indicate the **quantity of minutes** used.
2. Lightly speckle the area that would represent the **showerer’s total surplus (net benefits).**
3. Write on the right side of the sheet
   a) The **marginal benefit** of the 20th shower minute.
   b) The **marginal cost** of the 20th shower minute.
   c) The **marginal net benefit** of the 20th minute.
4. Turn in your demand curves

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**Exercise #2:**
Use Dr. Woodward’s Demand curve (write 3 numbers on your white boards)

- Suppose the price per minute is 50¢,
  1. What is his **marginal willingness to pay (MWTP)** for the 10th minute?
  2. What is his **marginal cost (MC)** for the 10th minute?
  3. What is his **marginal net benefit (MNB)** for the 10th minute?
Exercise #3:
Use Dr. Woodward’s Demand curve
(we will stop every 2 minutes to discuss)

- Suppose the price per minute is $2,
  1. Indicate on the figure how many shower minutes will he choose.
  2. Indicate on the figure using slashes, his total willingness to pay (TWTP) at that price & quantity?
  3. Indicate on the figure using light shading, his total cost (TC=TWTP) at that quantity
  4. Indicate on the figure using dots, his total surplus (net benefits) at that quantity (TNB=TWTP–THTP)?

A Graded Team Exercise

1. What is the MWTP for the 200th gallon?
2. If price = $2/q, how many gallons will be demanded?
3. If price = $2/q, how much surplus does the consumer enjoy?

Extra

- Suppose the city decides to offer a deal.
  - Dr. Woodward can pay 50¢ per minute or
  - he gets a free showers, but must limit total shower time to 10 minutes per week.

Which will he choose & why?

Hint: look at the surplus.