Class #3
Before we get started
- Get your team’s folder.
- Complete attendance sheet. It will be picked up at 3:55.
- Finish up your personal shower demand worksheet after you finish the iRAT.

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 (per week)</th>
<th>Money left for discretionary spending ($100 - C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.00</td>
<td>70</td>
<td>$1.00</td>
<td>$99.00</td>
</tr>
<tr>
<td>$0.10</td>
<td>50</td>
<td>$2.00</td>
<td>$98.00</td>
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<tr>
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<td>35</td>
<td>$3.50</td>
<td>$96.50</td>
</tr>
<tr>
<td>$0.25</td>
<td>30</td>
<td>$3.50</td>
<td>$96.50</td>
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<tr>
<td>$0.50</td>
<td>21</td>
<td>$3.50</td>
<td>$96.50</td>
</tr>
<tr>
<td>Price per minute</td>
<td>Minutes in the shower per week</td>
<td>Weekly shower expense (A×B)</td>
<td>Money left for discretionary spending ($100 – C)</td>
</tr>
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<tr>
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<td>$0</td>
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<tr>
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<td>21</td>
<td>$10.50</td>
<td>$89.50</td>
</tr>
</tbody>
</table>
Woodward's Shower Demand

Demand is a "mapping" from price to quantity.

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.
Marginal Willingness to Pay

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 transparencies

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 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=THTP) 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

- What is the MWTP for the 200th gallon?
- If price = $2/q, how many gallons will be demanded?
- 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.