I. Multiple Choice Questions

1. c) WHY? Consumer surplus is the difference in what the Fresca is worth to you, minus what you have to pay for it. If you are willing to pay $1, then the Fresca must be worth at least $1 to you. Thus, if you could have gotten it for 65 cents, your consumer surplus would have been at least 1-.65=.35, or 35 cents.

2. c) WHY? You want to spend each dollar in the most productive way, so that you end up with MU/P for good one equal to MU/P for good two. Since the last dollar spend on bagels gives you less utility than that spent on donuts, if you didn't spend that last dollar on bagels, you would lose less in utility than you would gain by spending it on donuts. Thus, you should buy the donuts.

3. b) WHY? If a good is an inferior good, then when income increases, demand for the good shifts in (i.e. $\frac{\% \Delta Q}{\% \Delta I} < 0$), while if a good is a normal good, then it shifts out (i.e. $\frac{\% \Delta Q}{\% \Delta I} > 0$ ). So, if Kraft dinner were an inferior good, and you had a million dollars, you could buy more normal goods instead. However, if it's a normal good, you still want more.

4. d) WHY? Recall that the intercepts of the budget line are $\frac{I}{P_1}, \frac{I}{P_2}$. If both prices and income double, the intercepts will become $\frac{2I}{2P_1}, \frac{2I}{2P_2}$ which is the same thing.

5. b) WHY? An increase in the after-tax wage is equivalent to an increase in the price of leisure. The substitution effect then implies demanding less of leisure, the now more expensive good, and thus working more. The income effect implies you feel richer and want more of all normal goods, including leisure, and thus work less. If the substitution effect is bigger, than overall you will work more.

6. d) WHY? A Giffen good is a type of inferior good. When looking at demand for inferior goods, it is always the case that the income effect works in the opposite direction from the substitution effect. What makes it a Giffen good is that the income effect outweighs the substitution effect, causing quantity demanded to move in the same direction as price.

II. Short Answer Questions

a) b) c) d)
III. In-Depth Problem

Thousands of $ worth of other goods

<table>
<thead>
<tr>
<th>$75</th>
<th>$70</th>
<th>$65</th>
<th>$60</th>
<th>$55</th>
<th>$50</th>
<th>$45</th>
<th>$40</th>
<th>$35</th>
<th>$30</th>
<th>$25</th>
<th>$20</th>
<th>$15</th>
<th>$10</th>
<th>$5</th>
<th>$0</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Years of Post-Secondary Education

a) The tangency of the budget line and indifference curve is at 3 years. The slope of the budget line is $10,000 so each person buys 3 years of education at $10,000 per year.

b) The heavy line represents a new lower price of education. It is supposed to be tangent to an indifference curve at 5 years of education, so each person buys 5 years of education at $5,000 per year.

c) The dashed line represents paying full price of $10,000 but having $75,000 to spend instead of $50,000. This obviously costs the government $25,000. The program in b) also cost $25,000 (5x$5,000). There would be less education bought in this case, but utility would be higher. The indifference curve tangent to this budget line is not drawn in, but we know that there is one above the curve from b) that could be reached now, as long as less education is bought.