More Practice Problems

1. If the demand for a product is perfectly price inelastic, what does the corresponding price consumption curve look like? Draw a graph to show the price consumption curve.

2. Suzie purchases two goods, food and clothing. She has the utility function $U(x, y) = xy$, where x denotes the amount of food consumed and y the amount of clothing.

a) Show that the equation for her demand curve for clothing is $y = I/(2P_y)$.

b) Is clothing a normal good? Draw her demand curve for clothing when the level of income is $I = 200$. Label this demand curve D_1. Draw the demand curve when $I = 300$ and label this demand curve D_2.

c) What can be said about the cross-price elasticity of demand of food with respect to the price of clothing?

3. Karl's preferences over hamburgers (H) and beverages (B) are described by the utility function: $U(H, B) = \min(2H, 3B)$. His monthly income is I dollars, and he only buys these two goods out of his income. Denote the price of hamburgers by P_H and of beverages by P_B.

a) Derive Karl's demand curve for beverages as a function of the exogenous variables.

b) Which affects Karl's consumption of beverages more: a one dollar increase in P_H or a one dollar increase in P_B?

4. Lou's preferences over soap (x) and toothpaste (y) are given by $U(x, y) = xy$.   His income is \$120.

a) Calculate his optimal basket when $P_x = 4$ and $P_y = 1$.

b) Calculate his income and substitution effects of a decrease in the shoes to \$3.

5. Rick purchases two goods, food and clothing. He has a diminishing marginal rate of substitution of food for clothing. Let x denote the amount of food consumed and y the amount of clothing. Suppose the price of food *increases* from P_{x1} to P_{x2}. On a clearly labeled graph, illustrate the income and substitution effects of the price change on the consumption of food. Do so for each of the following cases:

a) Case 1: Food is a normal good.

b) Case 2: The income elasticity of demand for food is zero.

c) Case 3: Food is an inferior good, but not a Giffen good.