NTU SSS Economics HE1001
Tutorial 4 (Week 5): Demand

1. Mark has the following utility function on goods x and y:

$$U(x; y) = \sqrt{x} + \sqrt{y}.$$

Prices are $p_y = 1$; $p_x = 5$:

   a. Assume that Mark's income is I = 60. What is his optimal consumption of the two goods?
   b. Derive Mark's demand for x, given that I = 60 and $p_y = 1$.
   c. If $p_x = p_y = 1$, what is the expression for Mark's Engel curve for good x. Is it a normal good?

2. Samuel consumes two goods, pizza (X) and hamburger (Y). His utility function is as follows:

$$U(X, Y) = XY$$

Donald has an income (I) of S$120 and the price of pizza (P_X) and hamburger (P_Y) are both S$1.

   a. What is Samuel's budget line?
   b. What quantities of X and Y will maximize Samuel's utility?
   c. Holding Samuel's income and P_Y constant at $$120 and $1 respectively, what is Samuel's demand curve for pizza?

3. Suppose you consume only apples and peaches. One day the price of apples increases and the price of peaches decreases, and you find that you can still afford to buy the original bundle (initial combination of peaches and apples that you were buying before both prices change). The price changes leave you neither better nor worse off. Is this last statement true or false? Explain why.