

Due: May 19, 2011

## **Econ 2002A Assignment.1**

**Answer the following questions (10 marks)**

1. (4 **marks**) The following equations describe the demand and supply of good X:

$$X_d = 100 - 2P$$

$$X_s = -60 + 2P$$

- a. Calculate the equilibrium price and quantity, and show them on a diagram.
- b. Assume any price above the equilibrium price, and determine the excess demand.
- c. Assume any price below the equilibrium price, and determine the excess demand.
- d. Draw the excess demand curve.

2. (3 **marks**) State whether each of the following statements is true or false. Using diagram(s) and appropriate assumptions, **explain** your response (marks will depend on explanation).

- a. Two indifference curves can intersect.
- b. Marginal rate of substitution is always diminishing.
- c. Cash gift usually is the best gift.

3. (3 **marks**) Suppose that income is  $M$ , and prices are  $P_1$  and  $P_2$ , and consider the following utility function:

$$U = x_1^{0.8} x_2^{0.2}$$

- a. Calculate the MRS. Is it diminishing? Explain.
- b. Using Lagrangian, derive the ordinary demand functions of  $X_1$  and  $X_2$ .
- c. Suppose  $M = \$100$ , and prices are  $P_1 = \$20$  and  $P_2 = \$20$ ; calculate the utility maximizing quantities of  $X_1$  and  $X_2$ . If price of good 1 drops to  $\$10$ , what would be the demand for  $X_1$ . Using this information, draw a demand curve for  $X_1$ .