

Econ 6401 – Fall 2007
Midterm #2 – Dr. Rupp

Name _____

Pledge (sign) _____
“I have neither given nor received assistance on this exam”

1. A consumer buys two goods: X and Y and has the utility function $U(x,y) = X^{1/3}Y^{2/3}$.

A. Find the generalized demand equation for X

B. Find the generalized demand equation for Y.

C. Are the above generalized demand equations homogenous to degree 0? Show why or why not.

D. Find the indirect utility function $V(P,M)$

2. A consumer has utility function $U(x, y) = 2x^{1/2}y^{1/2}$. Income is \$80 per week. Initially $P_x = \$4$ and $P_y = \$2$. Now, suppose the price of X rises to $P_x = \$5$. Answer the following:

A) Determine the total effect from this price change.

B) Determine the substitution effect from this price change.

C) Determine the income effect from this price change.

D) Show the income and substitution effects that you previously calculated on a graph below (label all axes and curves).

E) Calculate the equivalent variation measure after this price increase on the previous page. In words, interpret what the equivalent variation means.

3. Mrs. Betty Lou has utility function: $V = 5M/(P_x^{0.5}P_y^{0.5})$

A) Find the expenditure function

B) Find the compensated (Hicksian) demand function for X

C) Find the compensated (Hicksian) demand function for Y

D) Explain the difference between the compensated demand functions and the ordinary demand functions.

4. (A) Find the market demand curve for Frisbee's which is comprised of 100 individuals with identical demands: $P = 8 - \frac{1}{2} Q_i$

(B) Sketch a graph of the market demand curve below:

5. For the production function: $Q = 2K^{0.5}L^{0.5}$

a. Find the conditional input demand function: $K^*(Q, w, r)$

b. Find the conditional input demand function: $K^*(Q, w, r)$

c. Find the generalized long-run total cost function $TC(Q, w, r)$

d. Using words, define marginal cost.

e. Define consumer surplus.