Microeconomics Homework Part 1 (of 3) KEY

Principles of Economics with Dr. Beck

Module 6

*4 points*

1) Assume utility can be represented by the function:

Utility= 2x1/2

Where x equals the number of milkshakes consumed.

Furthermore, assume one unit of utility is equivalent to one dollar (i.e. 5 units of utility would give her $5 worth of benefit/happiness).

Assume milkshakes cost $0.75 each.

i) Does this utility function represent diminishing marginal utility? (1 point)

Yes, as x increases, TU increases at a decreasing rate

ii) Using marginal analysis, how many milkshakes would Jacilyn purchase and consume to maximize her utility? Explain. (3 points)

When x=1, TU=$2 and MU=$2. Since the MC is $0.75, buy milkshake #1!

When x=2, TU=$2.83 and MU= $0.83. Since MC is $0.75, so buy milkshake #2!

When x=3, TU=$3.46 and MU= $0.63. Since MC is $0.75, don’t buy milkshake #3!

*2 points*

2) In the blank provided, mark each of the following statements with an “N” if the statement is normative or a “P” if the statement is positive. (0.5 points each)

"Today, adjusted for inflation, the price of gasoline is about the same as it was in 1970."\_\_P\_\_\_

“Healthcare represents a growing share of the Finnish economy.”\_\_P\_\_\_

“Every Finnish citizen deserves access to healthcare.”\_\_N\_\_\_

“Funding higher education should be a country’s top priority.”\_\_N\_\_\_

*5 points*

3) Consider the following statement and tell me if you agree or disagree. Use concepts and terminology from this class to defend your point of view.

*“The optimal amount of pollution is none at all!”*

While pollution is bad, the optimal amount of is cannot be zero. For some things, the MB of the pollution generating activity is greater than the MC of enduring the pollution.

For instance, living in a house is pretty nice. Building a house generates some pollution but most people would say that it’s “worth it”. So the optimal amount of pollution cannot be zero. Of course this doesn’t mean that the current level of pollution is necessarily optimal either.

Deciding that the optimal amount of pollution is non-zero is perfectly compatible with valuing environmental quality very highly (as I do).

Note that the above thinking can be applied to other things, like crime or terrorism. These things are undesirable, but it would be too costly to try and completely eradicate them (if it were even possible).

*4 points*

4) Do you think it would be a good idea for a country like Finland, with its many highly trained workers and high level of modern capital, to specialize in producing t-shirts? Explain.

No. The opportunity cost for Finland to produce t-shirts is way too high. To devote resources, such as highly skilled workers and modern capital, to t-shirt production means less of those resources available to devote to the production of things like specialized machinery, energy, and other valuable goods.

*6 points*

5) Frodo and Sam both like mushrooms and pints of ale. Frodo can produce either 8 mushrooms or 16 pints of ale per day. Sam can produce 20 mushrooms per day or 10 pints of ale per day. Assume constant opportunity cost.

Suppose, before considering specialization and trade, Frodo produces and consumes 4 mushrooms and 8 pints, and Sam produces and consumes 10 mushrooms and 5 pints. Could they be made better off if they specialized and traded? If so, who should specialize in what, and why? Explain your reasoning and be specific.

Yes, they can both be made better off through specialization and trade.

For Frodo: For Sam:

The o.c. of 1 mushroom is 2 pints The o.c. of 1 mushroom is ½ pint

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Sam has the comparative advantage in mushroom production b/c he give up ½ of a pint for each mushroom he produces whereas Frodo gives up 2 pints for each mushroom he (Frodo) produces. Sam gives up fewer pints to produce one mushroom than Frodo and thus Sam has the comparative advantage in mushroom production. Frodo then has the comparative advantage in pint production.

If Sam completely specializes in producing mushrooms, he makes 20 mushrooms (and 0 pints).

If Frodo completely specializes in producing pints, he makes 16 ales (and 0 mushrooms).

Now there are 20 mushrooms and 16 pints of ales in the world: previously there were only 14 mushrooms and 13 pints. There are more of both thus there will exist some way to divide the goods so that both Frodo and Sam get more.

For instance, if they traded 5 mushrooms for 6 pints, they would both be better off than in a world without trade. Frodo will now consume 5 mushrooms (that’s better than 4!) and 10 pints (better than 8!). Sam will consume 15 mushrooms (better than 10) and 6 pints (better than 5). Of course there are other trades that would also leave both guys better off: this is just one example.

*2 points*

6) Assume that demand and supply in the market for luxury dog shampoo can be represented by the following equations:

Qd= 12.5 – 0.25P

Qs = -8.5 + 0.5P

Calculate equilibrium price and quantity. (1 point each)

P=\_\_28\_\_\_\_

Q=\_\_5.5\_\_\_

*2 points*

7) Explain the difference between “change in demand” and “change in quantity demanded”.

Change in quantity demanded represents a movement along a stationary demand curve and can only come from a change in one thing: the price. Change in demand means the demand curve has shifted in response to a change in something besides the price. Examples could include a change in the incomes of consumers, a change in the price or related goods, a change in tastes and preferences, or a change in the population of the consumers.

*8 points*

8) Consider the market for hotel rooms in Savannah, Georgia and evaluate each of the following scenarios. For each scenario, say the effect on the supply and demand model (for instance: “supply shifts to the left,” “demand shift to the right,” etc) and say if price and quantity will increase or decrease (2 points each).

a) American consumers decide that traveling to Europe is much more sophisticated than traveling within the US.

Effect on model: **\_\_\_Demand shifts to the left\_\_\_\_\_\_\_\_\_\_\_**

Predicted effect on equilibrium price: **Decrease\_\_**

Predicted effect on equilibrium quantity**: Decrease\_\_**

b) Domestic airfare increases in the US (consider a plane ticket and a hotel room as compliments).

Effect on model: **\_demand shifts to the left\_\_\_\_\_\_\_\_\_\_\_\_**

Predicted effect on equilibrium price: **\_decrease\_\_\_\_\_\_\_\_\_\_\_\_**

Predicted effect on equilibrium quantity: **\_Decrease\_\_\_\_\_\_\_\_\_**

c) Hotel workers form a labor union and are able to negotiate higher pay.

Effect on model**: \_Supply shifts to the left\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Predicted effect on equilibrium price: **\_\_increase\_\_\_\_\_\_\_\_\_\_\_**

Predicted effect on equilibrium quantity: **\_decrease\_\_\_\_\_\_\_\_\_\_\_\_**

d) A hurricane inflicts significant damage to Charleston, South Carolina, closing many hotels in Charleston. (Charleston is nearby and similar to Savannah thus making it Savannah’s largest competitor for tourism.)

Effect on model: **\_Demand shift to the right\_\_\_\_\_\_\_\_\_**

Predicted effect on equilibrium price: **\_Increase\_\_\_\_\_\_\_\_**

Predicted effect on equilibrium quantity:**\_Increase\_\_\_\_\_**