

Economics 308: Intermediate Microeconomics  
Department of Economics, Finance and Legal Studies  
University of Alabama  
Spring, 2020

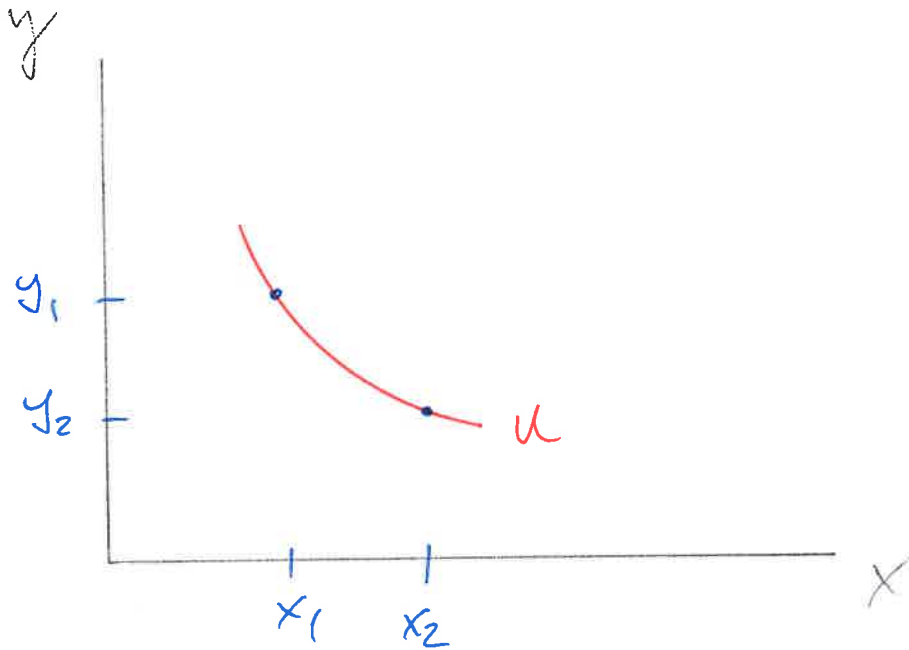
Midterm I

-key

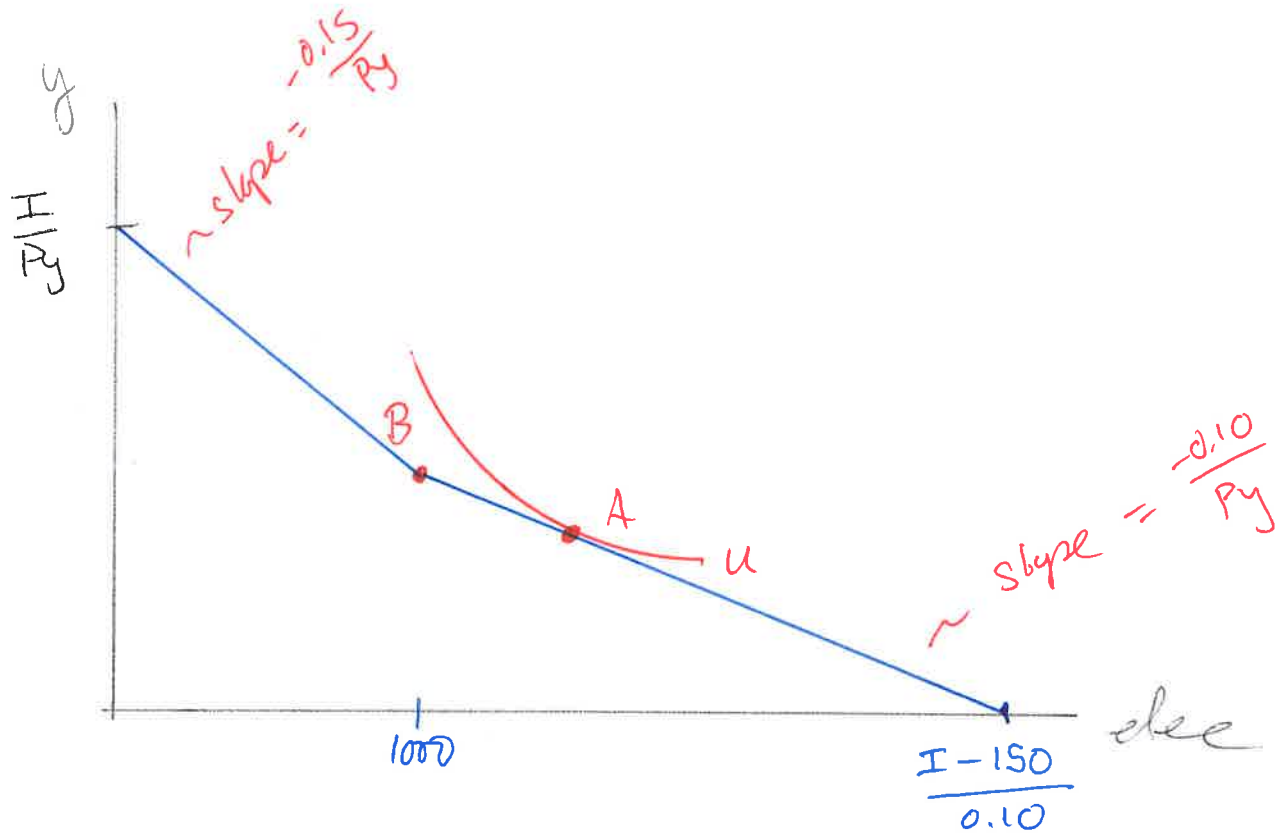
The exam is worth 100 points. Each question (six questions on six pages) is of equal value. There will be no communication with the exam proctors; if you believe a question contains an error or ambiguity, say so on your written examination, make an assumption to correct the alleged error or to resolve the ambiguity, and answer the question as well as you can.

1. Consider a two good economy ( $x$  and  $y$ ). If we observe a consumer choosing the bundle  $(x_1, y_1)$  when  $(x_2, y_2)$  is available, are we justified in concluding that  $(x_1, y_1)$  is strictly preferred to  $(x_2, y_2)$  for this consumer? Explain briefly (hint: the use of a graph may be helpful).

False, it could be that the consumer is indifferent between the two bundles



2. Consider a two good economy (electricity and  $y$ ). Suppose that an electric company charges consumers 15 cents per kilowatt hour for electricity for the first 1,000 units used in a month, but 10 cents for each extra kilowatt hour after that. Draw the budget constraint for a consumer facing this price schedule and briefly discuss why many individuals may *not* choose to consume exactly 1,000 kilowatt hours (be sure to label all axes, curves and intercepts). Explain briefly.

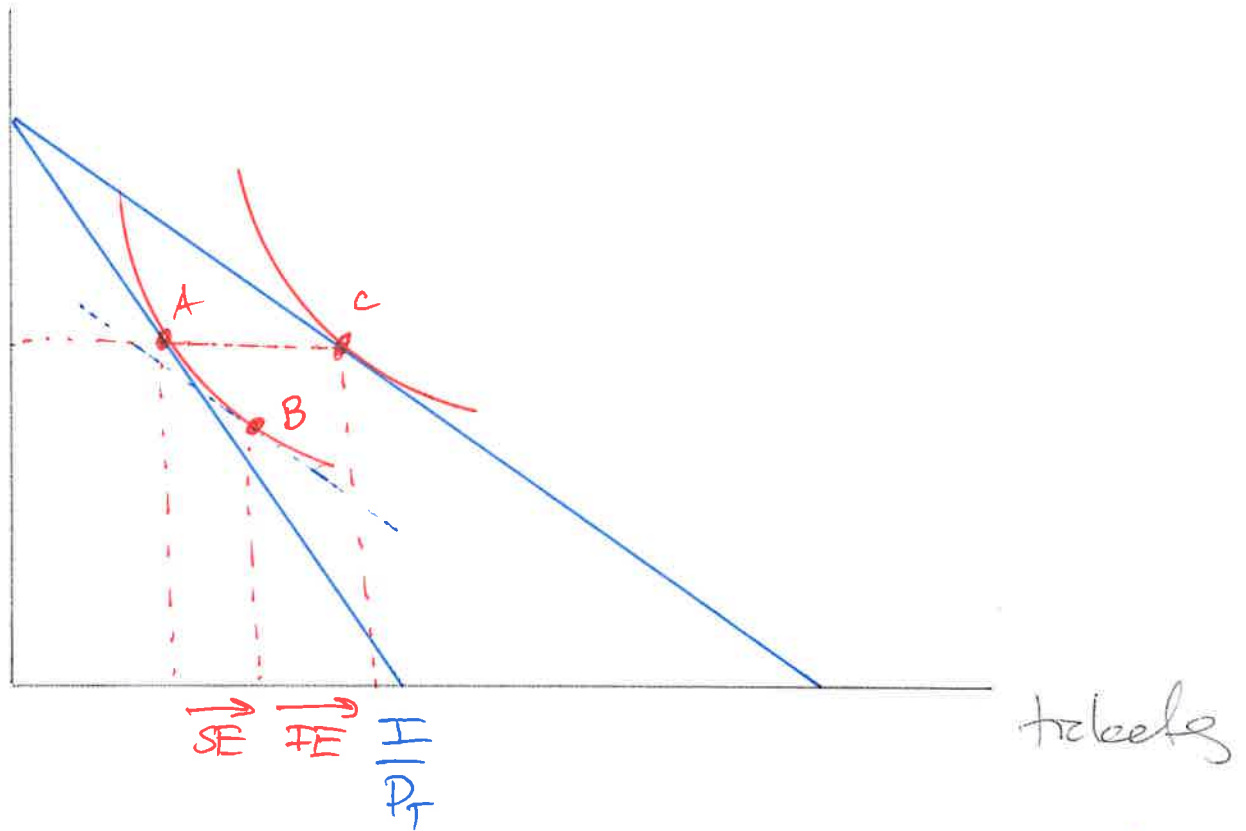


there are very few types of utility functions that would produce ind. difference curves that would be tangent at pt B (Leontif is one example)

3. Consider a two good economy (movie theatre tickets and popcorn). Suppose a decrease in the price of movie theatre tickets does not cause a change in Zach's consumption of popcorn. How can this be? Explain briefly using a graph and the concepts of income and substitution effects?

popcorn

High



$\downarrow P_t \Rightarrow$  no  $\Delta$  Popcorn  $\Rightarrow$  tickets & popcorn are neither substitutes nor complements

4. Consider a two good economy ( $x$  and  $y$ ). Thinking in terms of elasticities, what will be the change in the quantity demanded of an inferior (but not Giffen) good  $x$  if:
- The price of  $x$  rises?
  - Income rises?
  - The price of a substitute ( $y$ ) rises?

(a)  $\uparrow P_x \Rightarrow \downarrow Q_x$  unless a Giffen good

$$e_{Q_x, P_x} = \frac{\partial Q_x}{\partial P_x} \cdot \frac{P_x}{Q_x} < 0$$

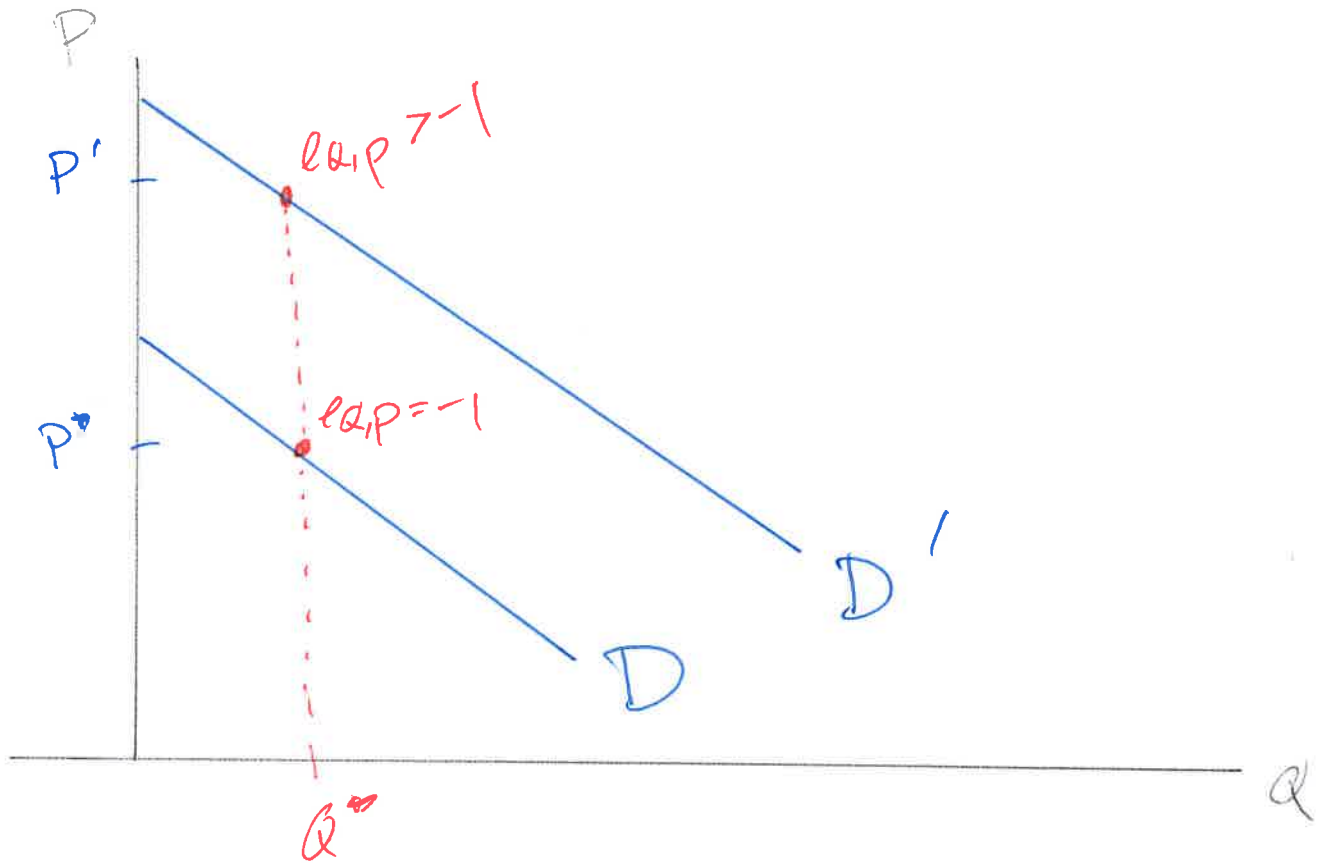
(b) if  $x$  is inferior  $\uparrow I \Rightarrow \downarrow Q_x$

$$e_{Q_x, I} = \frac{\partial Q_x}{\partial I} \cdot \frac{I}{Q_x} < 0$$

(c)  $\uparrow P_y \Rightarrow \uparrow Q_x$  if  $x$  &  $y$  are substitutes

$$e_{Q_x, P_y} = \frac{\partial Q_x}{\partial P_y} \cdot \frac{P_y}{Q_x} > 0$$

5. If a linear demand curve shifts parallel to the right, what happens to the (own price) elasticity of demand at a given quantity (use a graph)?



it becomes more elastic

$$e_{Q,P} = \frac{\partial Q}{\partial P} \cdot \frac{P}{Q}$$

$\frac{\partial Q}{\partial P}$  is fixed as the lines are parallel

$Q^*$  is fixed & hence of  $D'$   $P' > P^*$

& hence  $\frac{P'}{Q^*} > \frac{P^*}{Q^*}$

note: fixing  $Q^*, P^*$  to be unit elastic makes it easier, but is not necessary

6. The amount of food consumed by an individual at an "all-you-can-eat" restaurant can be considered a case of adverse selection. Discuss the meaning of this statement, and comment on how private parties or the government might intervene to reduce the problem of adverse selection.

Restaurant is unaware how much food consumers will eat

Ideally (consider a case where people either eat a little or a lot)

$$P_{lot} > P_{little}$$

But in practice

$$P_{lot} > P_{all} > P_{little}$$

Hence only people who eat a lot will show up to the restaurant and price will deviate to  $P_{lot}$

How to fix: (potential, potentially infeasible)

private: pay by height or weight  
pay by previous meal

gov't: eliminate buffets  
track previous eating habits