

HOMEWORK 2 PREFERENCES AND UTILITY

W & L INTERMEDIATE MICROECONOMICS
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- (1) Consider the preferences for bundles of Good 1 and Good 2 depicted below. Assume that preferences are monotonic (more is better).

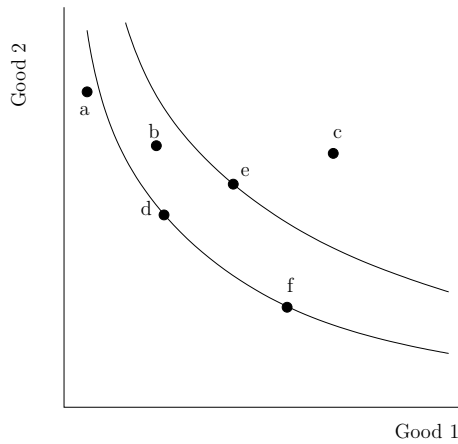


Figure 1.

- (a) Rank the bundles from most preferred to least preferred noting any ties.
 (b) Shade in area representing all bundles which this consumer likes at least as much as bundle f .
- (2) Consider the bundles of Good 1 and Good 2 depicted below. The two diagrams show the exact same bundles. Assume that both Jaime on the left and Lucy on the right are rational and have convex monotonic preferences.

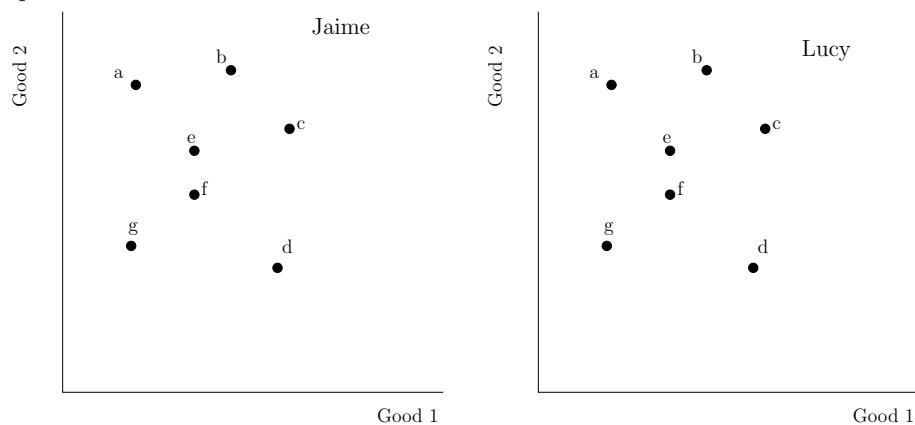


Figure 2.

- (a) Draw Jaime's indifference curves so that they reflect the following preference ordering.

$$(1) \quad b \succ a \sim c \succ e \succ f \succ g \sim d$$

(b) Draw Lucy's indifference curves so that they reflect the following preference ordering.

$$(2) \quad c \sim b \succ e \succ a \succ f \sim d \succ g$$

By the way, \sim means "is as good as"; \succ means "is strictly preferred to". So $x \succ y$ means that x is strictly preferred to y .

(3) *Strict Preferences* (Optional). Define \succ as follows. $x \succ y$ if and only if $x \succsim y$ and $y \not\succeq x$. Read this as x is *strictly* preferred to y . Assume that the commodity space is such that "ties" are possible (i.e. assume there exist indifference sets with more than one bundle). Assume also that \succsim is rational.

(a) Is \succ complete?

(b) Is \succ transitive?

(4) *Condorcet*. Suppose that Allen (A), Betty (B) and Caroline (C) each have rational (complete and transitive) preferences when it comes to choosing between seeing the three movies *Dancing Wolves* (W), *Marching Penguins* (P) and *Crouching Tigers* (T). Allen's preferences are as follows.

$$W \succ_A P \succ_A T$$

Meanwhile Betty's and Caroline's preference are describe as follows.

$$P \succ_B T \succ_B W$$

$$T \succ_C W \succ_C P$$

Defined a preference relation \succsim_m according to pair-wise majority-rule elections. That is define \succsim_m , so that $x \succ_m y$ if x would get at least 2 of the votes when both x and y are put to a vote and $x \sim y$ if x and y get an equal number of votes (which will never happen with three voters). Show that \succsim_m is irrational.

(5) Give an example of preferences, by sketching indifference curves which are ...

(a) convex but *not* monotonic.

(b) monotonic but *not* convex.

(6) Camilla Dover has preferences over consumption bundles of pizza (Z) and beer (B) represented by the utility function, $u(Z, B) = Z^{\frac{1}{8}} B^{\frac{1}{8}}$. Meanwhile Carson Doogle has preferences represented by $u(Z, B) = Z^2 B^2$.

(a) Draw a picture of Camilla's preferences in $Z \times B$ space by sketching a few of her indifference curves

(b) Draw a picture of Carson's preferences in $Z \times B$ space by sketching a few of his indifference curves

(c) Dr. Ity a senior Vatican official and amateur economist says, "We only have 5 pizza and 3 beers to give to Camilla and Carson. To maximize total welfare we should give all of it to Carson." Critique Dr. Ity's statement.