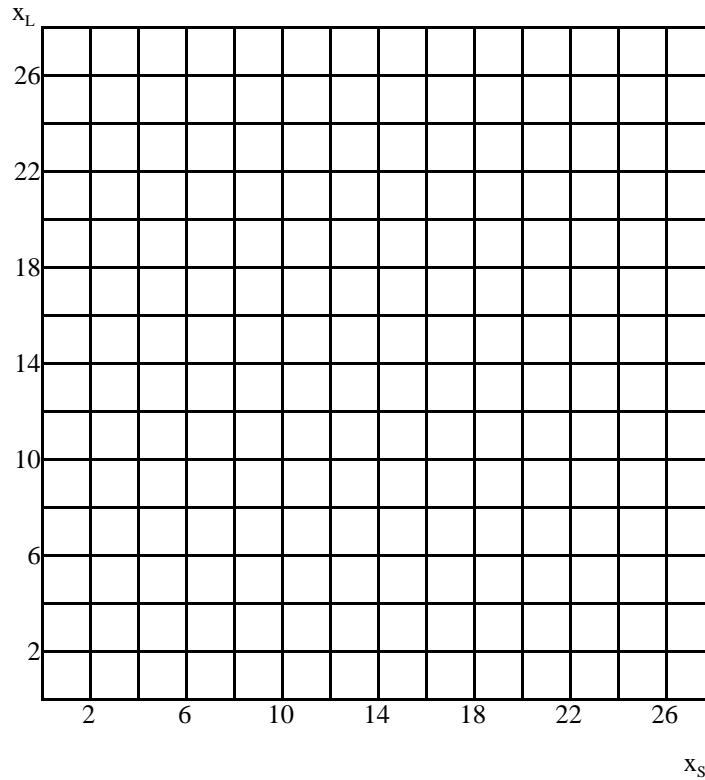


Problem Set 2 Due September 17

Ch. 3 Preferences and Ch. 4 Utility

Problem 1: Charlie has no health concerns and loves french fries. He wants to consume as many fries as possible. At Charlie's favorite hang-out fries come in two sizes: small and large. The small size (x_S) has 1 oz of fries, and the large size (x_L) has 5 oz of fries.

- a) Draw his indifference curve thru the bundle $(x_S, x_L) = (10,0)$ and of his indifference curve thru the bundle $(x_S, x_L) = (10,2)$



- b) Determine his $MRS_{S,L}$ at the bundle $(10,2)$

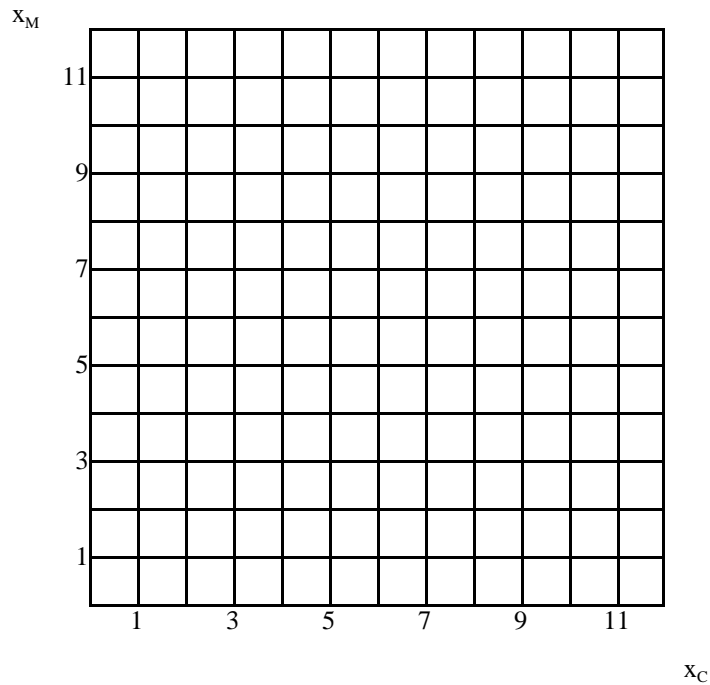
c) Explain in plain English what the $MRS_{S,L}$ at $(10, 2)$ measures

d) Does the indifference curve exhibit diminishing MRS? Explain.

e) Give an example of a utility function that captures his preferences

Problem 2: Sue is very picky about her consumption of milk and cookies. She always wants two cookies (x_C) per one glass of milk (x_M) that she gets.

a) Draw a picture of Sue's indifference curve through the bundle $(x_C, x_M) = (8, 8)$



b) Give an example of a utility function that captures Sue's preferences

Problem 3: Jill is indifferent between bundle $(x_1, x_2) = (20, 40)$, and bundle $(x_1, x_2) = (40, 20)$.

a) Suppose you are told nothing other than the fact that her preferences are strictly *convex*. Give an example of a bundle (x_1, x_2) that she strictly prefers to $(20, 40)$.

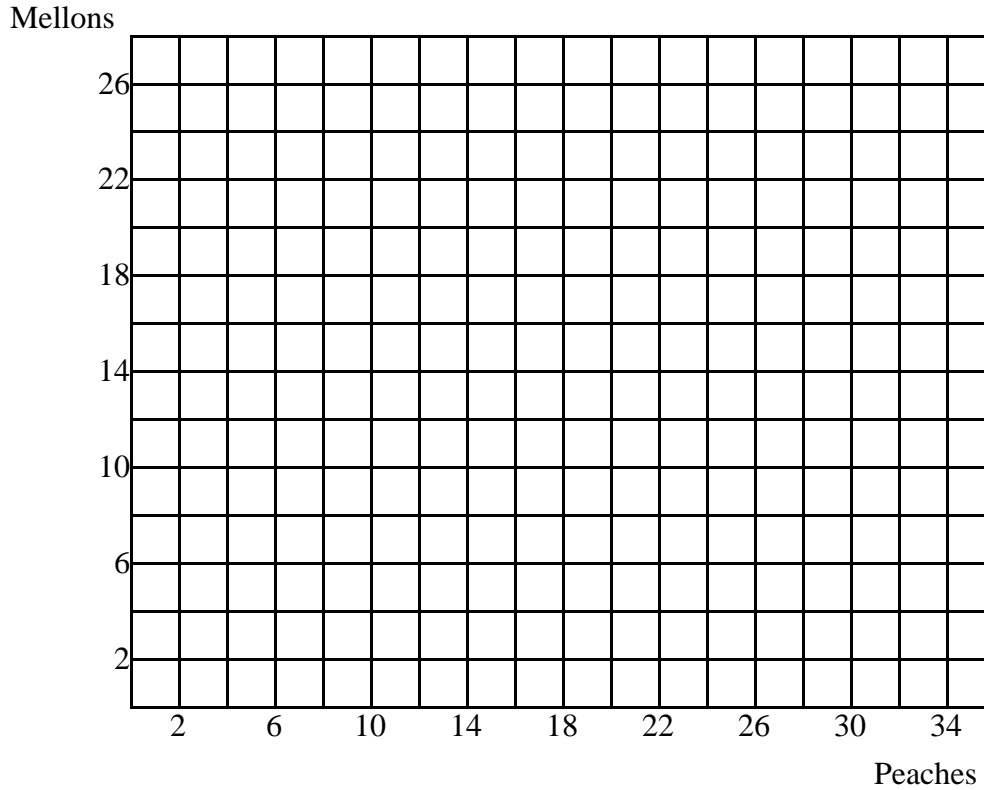
b) Suppose you are told nothing other than the fact that her preferences are *monotonic*. Give an example of a bundle (x_1, x_2) that she strictly prefers to $(20, 40)$.

Problem 4: It is the end of the summer and Mr. Fruitier is as happy as can be. He loves both peaches (x_p) and mellons (x_M). His preferences for the two goods can be captured by the following Cobb-Douglas utility function: $U = x_p \cdot x_M$. Determine if the following statements true or false (circle the right answer)

- | | |
|-------------------------|---------------|
| $(4, 9) \succeq (6, 6)$ | True or False |
| $(6, 6) \succeq (4, 9)$ | True or False |
| $(4, 9) \succ (6, 6)$ | True or False |
| $(4, 9) \sim (6, 6)$ | True or False |
| $(5, 9) \succeq (6, 6)$ | True or False |
| $(6, 6) \succeq (5, 9)$ | True or False |

Problem 5: Mr. Fruitier's preferences for peaches (x_P) and mellons (x_M) can be captured by the following Cobb-Douglas utility function: $U = x_P \cdot x_M$

a) Draw a picture of Mr. Fruitier's indifference curve through the bundle (6,6)



b) Illustrate his weakly preferred set. Are his preferences strictly convex and/or convex?

c) Does the indifference curve exhibit diminishing MRS? Explain.