

Homework Assignment #4

15 points

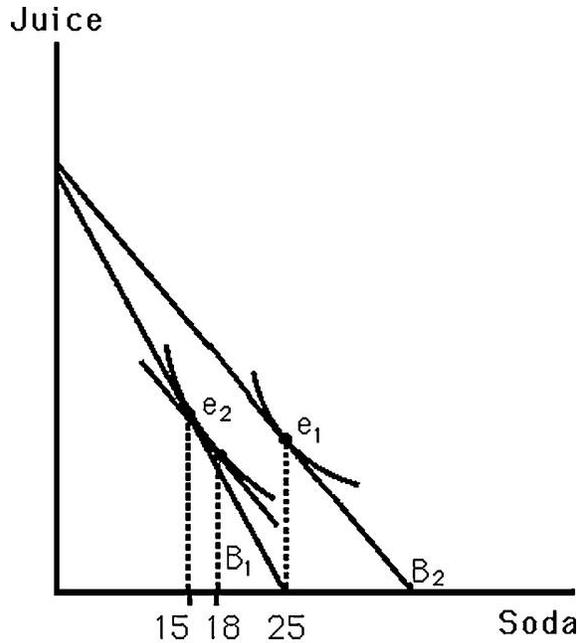
Due Date: Beginning of Class on **Tuesday, April 8, 2014**

Instructions: Make sure your answers are precise, complete and legible, with plenty of explanation for why you did what you did. If I can't read your answer, you won't get credit for it. Don't forget to label all items on graphs. Show all your work or points may be taken off.

1. Sue's utility function is $U(x, z) = 100x^{0.6}z^{0.4}$. The price of x is $p_x = \$5$, the price of z is $p_z = \$5$, and her income is \$1,200.
 - a. (2 points) What is Sue's optimal bundle (utility maximizing bundle)?
Hint: use the method of Lagrange, the substitution method, or the MRS=MRT method.
 - b. (2 points) Suppose the price of good z increases from \$5 to \$6 and then from \$6 to \$7. Graph Sue's utility maximizing bundles, making sure to graph her indifference curves and her budget constraints. Label the axes.
 - c. (1 point) Graph her price-consumption curve.
 - d. (1 point) Graph/derive her demand curve for good z .
 - e. (2 points) Now assume Sue's income equals \$2000. Redo parts b. and c. using this new income level. Draw new graphs.
 - f. (1 point) Graph the new demand curve in part e. when income equals \$2000. This demand curve can be drawn on the same graph from part d.
 - g. (1 point) Looking at the new curve demand from part f., is this good a normal or inferior good?

CONTINUED ON NEXT PAGE...

1. The figure below represents Bobby's indifference map for juice and soda. B_1 represents his original budget line. B_2 indicates his budget line from a decrease in the price of soda. Bobby initially is consuming at optimal bundle e_2 .



- (2 points) What change in quantity best represents his substitution effect?
- (3 points) What change in quantity best represents his income effect? Is soda a normal or inferior good?