

Place your name on the back of this sheet of paper and nowhere else. Staple your answers on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

1) (40 points) Draw a budget constraint/indifference curve diagram for an income of \$28 when the price of a mug is \$4/mug and the price of a glass is \$7/glass. Illustrate an increase in your income to \$56 and \$84. State how you found the three budget constraints and show all work. Use your graph to derive and plot the Engel Curve for mugs. State how you found that curve. Given your diagram, are mugs inferior goods in any section of the curve? State how you know.

2) (30 points) Draw the budget constraint/indifference curve diagram for an income of \$60, when the price of a download of an album is \$10/album and the price of a CD is \$12/album. Draw a second budget constraint showing the price of a download going up to \$15/album and showing that the downloads and CDs are substitutes. Explain how you found both budget constraints and show all calculations. Find the income effect and the substitution effect. State how you found them. Prove that your diagram has them as substitutes.

3) (30 points) Draw the budget constraint/indifference curve diagram for an income of \$30, when the price of bread is \$3/loaf and the price of butter is \$5/lb. Draw a second budget constraint showing the price of bread going up to \$6/loaf and showing that the bread and butter are complements. Explain how you found both budget constraints and show all calculations. Find the income effect and the substitution effect. State how you found them. Prove that your diagram has them as complements.