Economics 204        Problem Set 4
Print this out and draw your diagrams, etc on a separate sheet of paper so you can make them large enough

1. John can purchase a house for $100 a square foot and spends the rest of his money on other goods. His annual income is $200,000.
   a. Draw John’s budget line.
   b. Now suppose that the government taxes housing purchases at $50 a square foot. Suppose that the supply of housing is perfectly elastic, so the full burden of the tax falls on demanders like John. Suppose that with this tax, John chooses to buy a house that is 800 square feet. Indicate this point on your budget constraint.
   c. Would John prefer the housing tax or would he prefer to be taxed a lump sum of $40,000 or can you say? Justify your answer using a budget constraint/indifference curve diagram.

2. Suppose the price of apples is $3 per pound and income is $12.
   a. Given the following indifference curve diagram, construct a demand curve for bananas. (Your demand curve should have 3 points.)
   b. Compute the price elasticity moving from the budget line with an x-intercept of 4 to the line with an intercept of 6.
   c. Then compute the price elasticity moving from the budget line with an intercept of 6 to the line with an intercept of 12. Interpret these elasticities.
3. You consume only CDs and books. Suppose the price of CDs is $10.

Given the following indifference curve diagram,

![Indifference Curve Diagram](image)

a. Compute the **income elasticity**. Interpret this elasticity.

b. Can you say anything about whether the price elasticity for CDs indicates whether this good is elastic or inelastic?

4. Sam’s income demand elasticity of ham is 1.4 and his income elasticity of demand for green eggs is -0.05. Which good is normal and which is inferior?

5. Sharon can work up to 24 hours a day. Her wage is $10 an hour.

a. Draw her budget constraint. Be sure to label all intercepts.

b. What is the slope of the budget constraint? Explain how the slope relates to an opportunity cost.

c. Suppose that Sharon is subject to a 50% tax on all income over $50 a day. Draw the new budget constraint, clearly labeling the intercepts.

d. Suppose that instead of a tax, the government gives Sharon $10 in welfare payments IF her income is less than $50. Draw the new budget constraint. Can you say how this plan might affect Sharon’s incentives to work?