Economics 204  
Homework 3: Consumer Theory

1  *Risk versus Return* is an old adage on Wall Street. If higher expected returns are a “good” and greater risk of loss is a “bad,” what does a typical investor’s risk-return indifference map look like?

2  Jane has a weekly income of $100. She buys apples and pears, on which she spends all of her income. Initially, the price of one apple is $5 and the price of one pear is $10. At those prices, she buys 10 apples and 5 pears (bundle A). In answering the following questions, draw a new diagram for each part and only compare two bundles in each diagram.

   (a) The price of apples increases to $10 and the price of pears falls to $5. Jane then selects a bundle (bundle B) of 5 apples and 10 pears. Can you tell from just this information which bundle (A or B) Jane prefers?

   (b) Now suppose that, instead, at the new prices Jane prefers to select a bundle, C, of 6 pears and 7 apples. Can you now tell whether she prefers bundle A to bundle C?

   (c) Now assume that at the initial price for apples and pears, Jane selected a bundle of 8 apples and 4 pears (bundle D) and at the new prices she selected bundle B. Can you tell if she preferred bundle B to bundle D or vice versa?
3 Suppose that Sarah’s marginal value of apples in terms of bananas is greater than the relative price of apples in terms of bananas. Show this graphically, along with Sarah’s optimal choice. Will Sarah want to buy some apples or sell some apples?

4 Suppose that Smith’s runs a commercial taking actual customers coming out of the store and a list of what each purchased and then show you than these same purchases cost 10% more at Albertson’s. Does this mean you should switch to shopping at Smith’s?

5 The Smith family has an income of $1000 per month, which they spend on doctor visits and all other goods. Suppose doctor visits cost $100.

a) The government decides to pay half of the Smith family’s medical expenses, so that visits now cost them only $50. They now choose 8 visits. Draw the Smith family’s original budget line and new budget line. Show their new optimal point. Call that point P. What are the coordinates of P?
b) Suppose a new government is elected which does away with this policy. Instead the government gives the Smith family a cash grant of $400. Show the new budget line in your graph above. Does the budget line go above, below, or through point P? How do you know?

c) Assume that all families are exactly like the Smiths, with the same preferences and incomes. Which of these two programs is the most expensive for the government? Which will the Smith family prefer?
6. Sharon can work up to 24 hours a day. Her wage is $15 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.

7. George S. Oros has $1000 today and expects to receive $2000 a year from now. His savings account pays an annual interest rate of 25%. The bank is also willing to lend money at the same interest rate.

   a. Suppose that George saves all of your money to spend next year. How much money will he be able to spend today and next year?

b. Suppose that he borrows $800 and spends $1800 today. How much will he be able to spend next year?
c. Draw a budget constraint with “spending today” on the x-axis and “spending next year” of the y-axis. What is its slope? How does this reflect the relative price (price ratio) of spending today in terms of spending next year?

d. Suppose George chooses to neither borrow nor save. Illustrate this optimal point with the budget line with an indifference curve.