Youngberg

Econ 301—Bethany College

**Homework 04**

Answer all the following on a ***typed, stapled*** (if applicable)separate sheet of paper. You do not need to type equations and graphs. I charge 25 cents to staple your homework. Make sure that you justify your answers, use your own words, and show your work. All questions are equally weighted.

1. Construct an indifferent curve and budget constraint with Bars of Chocolate per Month on the Y axis and Bags of Marshmallows per Month on the X axis. Illustrate the effects of a ***decrease*** in the price of a ***bar of chocolate***. Illustrate what part of the change in ***bags of marshmallows*** is the income effect and what part of the change in ***bags of marshmallows*** is the substitution effect. ***Remember***: the change in price is for the Y axis; the indication of substitution and income effects references the X axis.
2. Consider the following indifference curves. Indicate which ones are well behaved (which are convex and are downward sloping). Be sure to show your work.
   1. U = (XY)2
   2. U = 5X + 10Y
   3. U = X0.5 + Y0.5
   4. U = Y/X
3. Using the following indifference curve and prices, indicate the optimal number of X and Y the consumer should consume. (The indifference curve is well behaved; I have already checked for that.)

PX = 2

PY = 3

I = 6

1. Calculate the following expected values:
   1. You get $15 if an even number is rolled on a 10-sided die.
   2. You get $1,000 if a “20” is rolled on a 20-sided die.
   3. You get $100 if a “12” ***or*** a “4” ***or*** a “10” is rolled on a 12-sided.
   4. You get $1 equal to the value rolled on an 8-sided die (a “1” gets you $1, a “2” gets you $2, etc).
   5. You get $80 if a “12” is rolled on a 20-sided die ***and*** a “2” is rolled on a 4-sided die. (Both dice are rolled at the same time.)
2. For each of the following errors, indicate if it is Type I or Type II error. ***Briefly***,justify your result.
   1. Presidential Candidate Mitt Romney says something wildly inaccurate about how much in taxes nearly half of Americans pay.
   2. David buys batteries from Rite Aid only to find out they don’t work.
   3. A publisher informs a prospective author that they will not publish his book which turns out to be a major success.
   4. Sarah turns down Sebastian’s proposal for marriage even though Sebastian’s a great guy.
   5. Because the Department of Defense automatically pays any shipping on any “high priority” item they buy, they are purposely overcharged for shipping by various customers.