08.04.2021

Yaşar University
Department of Economics, Spring 2020-2021
ECON 3003 Behavioral Economics Midterm I

Due on April 11, 2021.

1. (25 pts) Suppose that Mary has a utility function $U(W) = W^{0.5}$. Her only asset is the shares in the start-up e-com company. Next week she will learn the stock's value. She believes that it is worth \$225 with the probability 1/3, \$196 with the probability 1/2 and \$144 with the probability 1/6. **Write down the prospect and calculate the expected value and her expected utility.**
2. (20 pts) John has a Cobb Douglas type utility function for the British tea and coffee $U(q_1, q_2) = {q_1}^{a}{q_2}^{1-a}$. The demand functions for the British tea and coffee are as follows:

   $$q_1 = a\frac{Y}{P_1} \text{ and } q_2 = (1-a)\frac{Y}{P_2}$$

   The initial price for the first good is £P, for the second good is £2P and total income is £I. Draw the graph and analyse if the price of the first good will be £2P (British tea) in terms of substitution and income effect.
3. (25 pts) Obtain the budget constraint in terms of the present and future value. (Show all your work!) (Consider two time periods t_1 and t_2 with the income levels I_1 and I_2. The prices in each period is 1 and the interest rate is n. **Use these notations** while obtaining the values!)
4. (15 pts) Explain the Allais paradox with your own words!
5. (15 pts) Consider two friends Anna and Elsa whose gains and losses are listed as follows:

   Anna's investment is worth \$2.5 million (decreased from \$3.5 to \$2.5 million)
   Elsa's investment is worth \$2.2 million (increased from \$2 to \$2.2 million)
   For each of them write down the reference utility function (First determine the reference point (use a parameter) and derive **reference utility function for each)**.