ECON 200C, Spring 2021

Homework 1

Due: 4/9/2020, before the beginning of the discussion session

Problem 1. (Spring 2018, Midterm) John is at a blackjack table. He can place a bet of $10 or do nothing. So the cost of the bet is $10 and if he wins, gets $20 (net gain is $10); loses, get $0 (net gain is -$10). He is a risk neutral expected utility maximizer, with u(x) = x.

Consider the following scenarios:

(a) His probability of winning the bet is 0.495. What should he do? Suppose now prior to placing the bet, he can buy a perfectly informative signal that will tell him whether or not he is going to win or lose. How much is this information worth?

(b) Suppose now that the signal John can buy is not perfectly informative, but noisy. With 0.2 probability, the signal says 'a good deck of cards', and with 0.8 probability, the signal says 'a bad deck'. A good deck means his probability of winning is 0.7, and a bad deck means his winning probability is 0.4. How much is this information worth?

Problem 2. BHR Chapter 5 Exercises and Excursions 5.2.2

(a) Question 1.

(b) Question 2.