Game Theory, Fall 2022
Problem Set 9

Due on Nov 28 in class

1. ST 12.2

2. Consider the above Cournot duopoly again. But now assume that the firms' costs are determined by

$$c_1 = \theta + \varepsilon_1,$$
$$c_2 = \theta + \varepsilon_2,$$

   where θ, which can be either 3 or 5 with equal probabilities, is the common shock to both firms. And, ε_i, which can be either -1 or 1 with equal probabilities, is firm i's idiosyncratic shock. Assume θ, ε_1 and ε_2 are independent. This cost structure is common knowledge. As before, firm i only observes c_i. This means that it does not observe c_{-i}, θ, ε_1 and ε_2. Model this situation as a Bayesian game and write down each type's posterior beliefs.

3. ST 12.3

4. ST 12.6

5. ST 12.7