Information Concerning the Final Exam

The exam covers material from the November 10th class onward. There are three problems on the exam. The first two will be familiar to you from recent homework assignments. The third problem is more involved and has multiple parts. The setup of the third problem is as follows:

There are two sellers, each of whom owns one unit of an indivisible, homogeneous good, and one buyer, who may want to buy at most one of the units. Each seller $i$ privately knows the cost $c_i$ at which he can provide the item, while the buyer privately knows the value $v$ that he places on acquiring one unit. We assume that $v$, $c_1$, $c_2$ are drawn from the uniform distribution on $[0, 1]$. Seller $i$’s utility is $p - c_i$ if he sells at the price $p$ and it equals $p$ if he does not sell but receives a payment of $p$. Similarly, a buyer’s utility is $v - p$ if he buys at the price of $p$ and $-p$ if he does not acquire a unit but makes a payment of $p$.

1. (a) (8 points) Let $c_{(1)}$ denote the smaller of the two costs. The efficient outcome of trading is as follows:

   • If $v \geq c_{(1)}$, then the buyer acquires the item of the seller whose cost is $c_{(1)}$.
   • If $v < c_{(1)}$, then each seller keeps his item.

   In words, it is efficient for the buyer to buy the cheaper of the two units, if it is less than his value. This maximizes the gains from trading.

You will have the full three hours to work the exam. In length, however, it is about the same as the two midterms. You are not likely to be productively working on the exam if you’re still taking it after an hour and a half.

Finally, I will be out of town between the afternoon of Dec. 8 and the afternoon of Dec. 11. I’ll be available for appointments on Monday, Tuesday and Wednesday of the week of Dec. 13.