ECO316: Applied Game Theory

Problem Set #2 Solutions

1. **Bank Run:**

   (a) First, suppose that nobody chooses to withdraw. Then, the bank has \$1000 remaining, so customers receive no losses. Since withdrawing money costs at least \$2, all customers strictly prefer not to withdraw. Hence, nobody withdrawing is an equilibrium. Next, suppose everybody chooses to withdraw. If a single customer chose to remain, they would lose all their money; thus even for the customers for whom withdrawing costs \$9, they would strictly prefer to withdraw, so everybody withdrawing is an equilibrium.

   (b) Yes, there is one other equilibrium, namely where the 30 customers with low withdrawal costs withdraw and the rest remain. If 30 customers withdraw, the bank has \$700, so the remaining depositors suffer losses of \$4. However, as that is less than their withdrawal cost, they do not wish to withdraw. Also, none of the 30 withdrawers would prefer to remain as the losses of \$4 are greater than their withdrawal cost. Note that 80 customers withdrawing cannot be an equilibrium as the bank will have \$200 remaining, so any remaining customers would lose all their money, so