Microeconomics II (PhD)
Tutorial 5, June 24 akleiner@uni-bonn.de

Note: There is only one exercise sheet for the 5th tutorial.

1. Recap exercise 23.C.10 in Mas-Colell, Whinston and Green [MWG].
2. Solve exercise 23.D.6 in MWG.
3. Solve exercise 23.D.2 in MWG.
4. Solve exercise 23.E.1 in MWG.
5. Solve exercise 23.E.3 in MWG.
6. *Interdependent value auction*

   Suppose there is one object for sale and N potential buyers. Each agent privately observes a signal X_i, which is independently distributed on $[0, \overline{X}]$ with density f.

   Buyers have quasi-linear utilities, i.e. in case of winning the object buyer i has utility $v(x_i, x_{-i}) - p$, where p denotes the payment made and utility of 0 in case of not winning. Suppose that v is increasing in all signals, symmetric in the last $N-1$ signals, and denote by $\overline{v}(x_i, y)$ the expected valuation of agent i given he received signal x_i and the highest signal among all other signals has value y.

   Show: In a second price auction, each agent bidding according to the bid function $\beta(x_i) = \overline{v}(x_i, x_i)$ is a Bayes-Nash equilibrium.

   Is it a dominant strategy to follow this bid function? Is it an ex-post equilibrium?