

## ECO4010 Tutorial 9

1. Prove that a weakly dominant strategy  $s'_i \in S_i$  is a strictly dominant strategy iff  $\operatorname{argmax}_{s_i} u_i(s_i, s_{-i})$  is a singleton for all  $s_{-i} \in S_{-i}$ .
2. Consider the following modification of a two-bidder second-price sealed-bid auction. Bidder 2 receives an advantage as follows: If bidder 2's bid is at least 80% of bidder 1's bid, then bidder 2 wins and pays 80% of bidder 1's bid. If bidder 2's bid is less than 80% of bidder 1's bid, then bidder 1 wins and pays 1.25 times bidder 2's bid. Suppose bidder  $i$  values the object being sold at  $v_i$ ,  $i = 1, 2$ . Prove that it is a weakly dominant strategy for each bidder to bid his or her valuation.