1. Using the notes from the opening lecture, manipulate the formula for the equilibrium bid function to obtain the form: \( \beta(v) = E[ \text{Highest value among the } N-1 \text{ other values} \mid \text{my value of } v \text{ is highest}] \). Explain how your formula merits this interpretation.

2. Where is the assumption that there is a minimum bid of zero used in the derivation? Show that if there is no minimum bid, then there can be other equilibria besides the identified one.

3. Use the “old” method described in the notes to find the symmetric equilibrium of an auction with two bidders in which both bidders pay but only the highest bidder wins the object. Be sure to use the same model and notation, adjusting only for the difference in the rules of the auction mechanism.