Stat 155 Fall 2009: Homework 5

Due October 29, 2009

- *Please show all your steps. No credit will be given for just giving the answer, without any supporting work.*

- *Grading: 3 points for a complete solution, 2 points for an almost correct solution, 1 point for some correct work, 0 otherwise*

1. Set up the following situation as a general-sum game, using preferential ranking to decide on payoffs:
   Robbery: (Dixit and Nalebuff) A is a typical homeowner and B, an average burglar. A is trying to decide whether or not to keep a gun in the house, and B faces the options of whether or not to bring a gun to his next break-in.

2. Problem 4.1, page 107, from *Game Theory, Alive*

3. Problem 4.3, page 108, from *Game Theory, Alive*

4. Problem 4.8, page 109, from *Game Theory, Alive*

5. Does every general-sum game have to have at least one Pareto optimal outcome? Justify your answer.