**UTİ/UBİ 553 Game Theory**

**HOMEWORK V**

**Due date: Nov 7th/9th, 2018**

**1. (10 p)** It is a two player simultaneous move game and each of two players announces an integer between 0 and 100. Let *a*1 be the announcement of Player 1 and *a*2 be the annoucement of Player 2. The payoffs are determined as follows.



Find the Nash Equlibrium (or Equilibria) for this game.

1. (**20 p**) Consider the following variation to the *Rock* (*R*), *Paper* (*P*), *Scissors* (*S*) game:
* Suppose that the Player 1 (row player) has a single type, *Normal*.
* Player 2 (column player) has two types *Normal* and *Simple*.
* A player of *Normal* type plays this zero-sum game as we studied in class whereas a player of type *Simple* always play *P*.
* Player 2 knows whether he is *Normal* or *Simple*, but player 1does not.
1. Suppose player 2 is of type *Normal* with probability 1/3 and of type *Simple* with probability (2/3). Find all pure strategy Bayesian Nash Equilibria.
2. Suppose player 2 is of type *Normal*  with probability 2/3 and of type *Simple*  with probability (1/3). Find all pure strategy Bayesian Nash Equilibria.