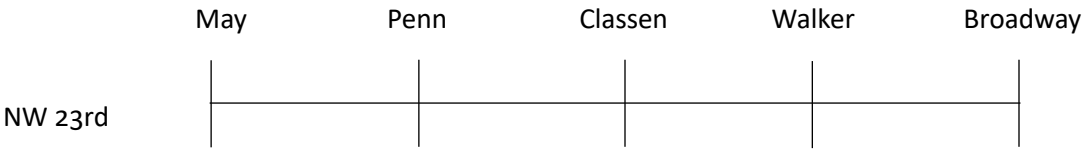
Problem Set 2

"Guys. It's time for some game theory."

The "Curbside" organization operates along NW 23rd St. between May Ave. and Broadway Ave. The city grid is shown in the figure below:



The organization sets the price of the magazine that is sold at $2, and assigns two organization members to place themselves along 23rd St. The organizer tells each of them they they'll be paid 100% of how much money they collect. The only decision that each of the magazine purveyors has is whether to locate at the corner of NW 23rd and either May, Penn, Classen, Walker, or Broadway. The strategy of each salesperson is then comprised of those latter five streets. Since the price is fixed by the Curbside organization, each member wants to locate so as to maximize the number of magazines they sell.

For simplicity, assume these five streets are equidistant from each other. Customers live only among NW 23rd, and are evenly distributed between May and Broadway (so there are no customers that live west of May or East of Broadway). Customers know that the two salespeople set the same price, so they buy

from the seller that is closest to them. The total number of units sold on NW 23rd is fixed. The only issue is whether a customer buys from seller 1 or seller 2. This means that a magazine seller will want to locate so as to maximize the share of their customers. Thus, we can think of each seller's payoff as the total customer share. The figure below shows these customer share payoffs:

	Seller 2's Location					
Seller 1's Location		May	Penn	Classen	Walker	Broadway
	May	1/2, 1/2	1/8, 7/8	1/4, 3/4	3/8, 5/8	1/2, 1/2
	Penn	7/8, 1/8	1/2, 1/2	3/8, 5/8	1/2, 1/2	5/8, 3/8
	Classen	3/4, 1/4	5/8, 3/8	1/2, 1/2	5/8, 3/8	3/4, 1/4
	Walker	5/8, 3/8	1/2, 1/2	3/8, 5/8	1/2, 1/2	7/8, 1/8
	Broadway	1/2, 1/2	3/8, 5/8	1/4, 3/4	1/8, 7/8	1/2, 1/2

Determine where the magazine sellers will locate using the process of iterative deletion of strictly dominated strategies.

Matching Game

Three men (Called M1, M2, and M3) and three women (called W1, W2, and W3) seek marriage partners. Preferences over potential marriage partners are as follows:

M1: W1, W3, S, W2 W1: M1, M3, S, M2

M2: W3, W1, S, W2 W2: M2, S, M3, M1

M3: W1, W3, S, W2 W3: M3, M2, S, M1

The first of these, for example, is to be read as: the first man prefers W1 to marrying W3, to being single, to marrying W2"; and so on.

Any proposed set of matches can be upset if a man and a woman both prefer each other to the partners they are currently with. With whom will each settle down?