Math 5370   **GAME THEORY**   Spring 2019
Dr. Duval   **Homework**
Wednesday, April 17

Follow the separate general guidelines for Parts A,B,C. Be sure to include and label *all four* standard parts (a), (b), (c), (d) of Part A in what you hand in.

Voting and ranking mechanisms
Section 13.1

A: Reading questions. Due by 3pm, Mon., 22 Apr.

1. In the example of Figure 13.1, explain why A defeats C, C defeats B, and B defeats A.

2. What would be the outcome of the example in Figure 13.1 under:

   (a) plurality voting;

   (b) runoff election

3. In the example of Figure 13.3, why would some voters change their preference?

B: Warmup exercises. For you to present in class. Due by the end of class Mon., 22 Apr.

Exercise 13.1

Definitions
Section 13.2

A: Reading questions. Due by 2pm, Tue., 23 Apr.

1. What is the difference between a voting rule and a ranking rule?

2. What are we assuming about the preferences of each voter? Can you imagine a situation where those assumptions might not apply?

3. Remark 13.2.3 explains how a voting rule can yield an **induced ranking rule**. Show how, in Example 13.1, the voting rule of plurality yields an induced ranking rule.

4. Verify the two claims in the paragraph after proof of Lemma 13.2.5:

   (a) In the examples of Figures 13.2 and 13.3, the plurality voting rule yields an induced ranking rule that violates IIA.

   (b) In the example of Figure 13.8, the runoff election voting rule yields an induced ranking rule that violates IIA.

B: Warmup exercises. For you to present in class. Due by end of class Wed., 24 Apr.

Exercises 13.2, 13.3.