

Math 1007 Summer 2025
Mathematics and Politics
Homework 2
Due Thursday, July 3

Name:

- (1) Do *The Mathematics of Politics* problem 1.3
- (2) Do *The Mathematics of Politics* problem 1.4
- (3) Do *The Mathematics of Politics* problem 1.7
- (4) Do *The Mathematics of Politics* problem 1.11
- (5) Do *The Mathematics of Politics* problem 1.12
- (6) Do *The Mathematics of Politics* problem 1.16 (hard)
- (7) Do *The Mathematics of Politics* problem 1.17
- (8) Imagine we have a *three*-candidate race, where
 - 18 voters prefer A to B and prefer B to C;
 - 15 voters prefer A to C and prefer C to B;
 - 24 voters prefer B to A and prefer A to C;
 - 8 voters prefer B to C and prefer C to A;
 - 16 voters prefer C to A and prefer A to B; and
 - 18 voters prefer C to B and prefer B to A.

We might summarize that in the following table:

Name: _____

18	15	24	8	16	18
A	A	B	B	C	C
B	C	A	C	A	B
C	B	C	A	B	A

Note there are no “correct” answers to these questions, but I want you to think about them:

- (a) Who should win this election?
- (b) Who should get second place?
- (c) What would happen if A drops out of the race? What if B drops out? What if C drops out?
- (d) Does any of that change your answer to part (a)?
- (e) What other information might be useful to you in making this decision?