

Econ 308 HW # 4

1. There are three alternatives A, B, C and seven voters with the following rankings:

Voter 1	Voter 2	Voter 3	Voter 4	Voter 5	Voter 6	Voter 7
A	A	C	C	A	B	B
B	B	B	B	C	A	C
C	C	A	A	B	C	A

- (a) Is there a majority alternative? Why or why not?
- (b) What is the Borda Score of each alternative?
- (c) What is the Condorcet score of each alternative?
2. Consider the following apportionment problem: There are a total of 25 seats to be allocated. There are five states with the following populations: State A (13), State B (26), State C (39), State D (74), and State E (98). Find the allocations suggested by Hamilton's, Jefferson's, Webster's, Adam's, and Hill's methods.
3. There are four claimants with the following claims: Claim A = \$50, Claim B = \$200, Claim C = \$300, Claim D = \$450. There is a total of \$800 to allocate.
- (a) Find the claims allocation suggested by the proportional rule.
- (b) Find the claims allocation suggested by the Talmudic solution.
- (c) Find the claims allocation suggested by the Maimonides's rule.
- (d) Find the claims allocation suggested by the Shapley value.
4. Consider the following cost sharing game: There are three players with the following costs: $c(A) = 15$, $c(B) = 16$, $c(C) = 18$, $c(A,B) = 24$, $c(A,C) = 22$, $c(B,C) = 26$, and $c(A,B,C) = 30$.
- (a) Graphically identify the core of this cost sharing game.
- (b) Find the Shapley value of this cost sharing game.