

1. For each of the following weighted voting systems

- list all winning coalitions
- all voters that have veto power
- all dummy voters
- the Banzhof index

(a) [51:52,48]

(b) [3:2,2,1]

(c) [8:5,4,3]

(d) [51:45,43,8,4]

2. The County Board of Nassau County, NY had six members and operated by a weighted voting system since the members represented towns of different sizes. The table gives the numbers of votes assigned to each member in 1958 and 1982.

District	Votes in 1958	Votes in 1982
Hempstead 1	9	30
Hempstead 2	9	28
North Hempstead	7	15
Oyster Bay	3	22
Glen Cove	1	6
Long Beach	1	7
Quota	16	65

- (a) Who are the dummy voters in each year?
- (b) What are the winning coalitions?
- (c) Find the Banzhaf index assuming the Hempstead members vote together.
- (d) The percentage of voters in each district is given by: Hempstead 55.8%, North Hempstead 16.4%, Oyster Bay 23.0%, Glen Cove 1.7%, and Long Beach 3.1%. How closely does the power of the members of the board reflect the voters they represent?