Math 1015

Homework #4

#1, 3, 4, 6

#1 [18:6,4,4,3,2,1]

a NO dictator, since nobody's vote is 18 or higher

b The 6 has veto power, since all the rest together only adds to 14, so the 6 is required to reach 18. Also the 4's and 3 each have veto power

c NO dummies. Even the 1 can sometimes make a difference, like in $6+4+4+3+1 = 18$

#3 a 270 is the quota - that's what you need to win.

b. NO - no state has 270 by itself

c NO - no single state is required in order to win

d NO - even the small states can matter in some situations

4 $[15 : 10, 7, 3]$

A B C

perms	weights	pivotal
A B C	10 7 3	B
A C B	10 3 7	B
B A C	7 10 3	A
B C A	7 3 10	A
C A B	3 10 7	B
C B A	3 7 10	A

SS:

A: 3/6 = 50%

B: 3/6 = 50%

C: 0/6 = 0%

6 $[18 : 8, 8, 5, 4]$

A B C D

ABD: Total 20, A,B,D all critical

ABC: Total 21, A,B,C all critical

ABCD: Total 25, A,B are critical, C,D not critical.