Math 1015: Homework #4

Question 1. In the weighted system $[12 : 8, 7, 1]$, explain in words why the 8 & 7 have the same amount of power even though 8 is more than 7.

Question 2. Consider this weighted voting system: $[15 : 10, 3, 3]$. In each part, briefly explain (don't just say "yes" or "no"):

a) Are there any dictators?

b) Are there any voters with veto power?

c) Are there any dummies?

Question 3. Repeat the previous question, but for $[18 : 6, 4, 4, 3, 2, 1]$.

Question 4. Repeat the previous questions, but for $[19 : 12, 8, 4]$.

Question 5. Look up the numbers for the weights used in the US Electoral College system. (Try Wikipedia "United States Electoral College", scroll down to section "Current electoral vote distribution".)
    In each part, briefly explain (don't just say "yes" or "no"):

a) What is the quota in this system?

b) Is any state a dictator in this system?

c) Does any state have veto power?

d) Is any state a dummy?

Question 6. In each part, invent a different example of a weighted system (like $[? :?????]$) having:

a) a dictator

b) someone with veto power who is not a dictator

c) more than one voter with veto power

d) a voter with veto power, and at least one dummy