

Name: _____ score: _____ / 10

There are 10 points possible on this quiz. No aids (book, notes, etc.) are permitted. You may use a calculator. **Show all work and supporting calculations for full credit. Explain how you get your answers.**

1. (4 points) Consider the weighted voting system $[20 : 8, 7, 2, 2, 2, 1]$

(a) Identify the dictators, if any. Explain your reasoning.

(b) Identify any players with veto power, if any. Explain your reasoning.

(c) Identify any dummies, if any. Explain your reasoning.

2. (2 points) Consider the weighted voting system $[10 : 6, 4, 3, 2, 2, 1]$,

(a) Does $\{P_1, P_5, P_6\}$ form a winning coalition? Explain.

(b) It is a fact that $\{P_1, P_2, P_4, P_5\}$ forms a winning coalition. Underline the players that are **critical** to the coalition, and write/provide a computation that supports this.

P_1, P_2, P_4, P_5

3. (4 points) For the weighted voting system $[60 : 40, 30, 20, 10]$, the winning coalitions are listed below. The critical players are underlined.

(a) Using this information, determine the Banzhaf Power Distribution.

winning coalitions

P_1 P_2

P_1 P_3

P_1 P_2 P_3

P_1 P_2 P_4

P_1 P_3 P_4

P_2 P_3 P_4

$P_1 P_2$ P_3 P_4

- (b) Does this power distribution seem fair given the weighted voting system described above? Explain.