

DECISION ANALYSIS – SHORT EXERCISES IX – SOCIAL CHOICE THEORY – VOTING RULES

I. Consider the provided social profiles and determine the winner according to the specified voting rules.

Profile (12 voters): 5: A > B > C 4: B > C > A 3: C > B > A a) Plurality rule: A: 5 B: 4 C: 3 Winner: A	b) Anti-plurality rule: A: 5 B: 12 C: 7 Winner: B c) Plurality with run-off: 5: A > B A: 5 B: 7 4: B > A 3: B > A Winner: B	d) Borda count BSc(A) = 5·2+4·0+3·0 = 10 BSc(B) = 5·1 + 4·2 + 3·1 = 16 BSc(C) = 5·0 + 4·2 + 3·1 = 11 Ranking: B > C > A	e) Condorcet method Pairwise comparisons A B C A - 5 5 B 7 - 9 C 7 3 - Condorcet winner: B
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II. Consider the 750 votes for the three parties: A (240 votes), B (360 votes), and C (150 votes). Distribute the 8 seats between the parties using the indicated methods.

Party	A	B	C	a) D'Hondt method
N=1	240	360	150	360B, 240A, 180B, 150C, 120B,
N=2	120	180	75	120A, 90B, 80A
N=3	80	120	50	A - 3 seat(s)
N=4	60	90	37.5	B - 4 seat(s)
N=5	48	72	30	C - 1 seat(s)

III. Consider the mixed non-compensatory system to distribute the seats in a 200-seat parliament to three parties: A, B, and C, for which the shares in the popular vote and the number of seats attained in the 100 FPTP districts are provided in the below tables. Provide the PR seats (out of 100 seats) assigned to each party by the Hamilton method and the total number of seats.

Non-compensatory				
	% votes	FPTP	PR	Total
A	50	60	25	85
B	30	10	15	25
C	20	30	10	40