

Math 1015 mastery checklist

Ranked voting

A1	Plurality system	
A2	Ranked choice voting	
A3	Condorcet's method	
A4	Borda count	
A5	Majority criterion	
A6	Unanimity criterion	
A7	Condorcet Winner criterion	
A8	Monotonicity criterion	
A9	IIA criterion	
A10	Manipulability	
A11	Random dictator	
A12	Approval voting	

Weighted voting

B1	Dummies, dictators, & veto power	
B2	Shapley-Shubik power index	
B3	Banzhaf power index	

Gerrymandering

C1	Determine possible outcomes	
C2	Draw districts to achieve outcomes	
C3	Efficiency gap	
C4	Convex hull ratio	
C5	Isoperimetric quotient	

Graph theory

D1	Paths, degrees, connectedness	
D2	"Imagine a graph" and answer questions	
D3	Formal description of a graph	
D4	Does an Euler circuit/path exist?	
D5	Euler's sum-of-degrees theorem	
D6	Draw an Euler circuit/path	
D7	Draw a minimum duplication circuit/path	
D8	Draw a Hamilton circuit, or say none exists	
D9	TSP brute force	
D10	TSP [repeated] nearest neighbor	
D11	TSP sorted edges	
D12	MST nearest neighbor	
D13	MST sorted edges	