Math 1015 mastery checklist

	Ranked voting	points 1	2
1	Plurality system		
2	Ranked choice voting		
3	Condorcet's method		
4	Borda count		
5	Majority criterion		
6	Unanimity criterion		
7	Condorcet Winner criterion		
8	Monotonicity criterion		
9	IIA criterion		
10	Manipulability		
11	Random dictator		
12	Approval voting		

Weighted voting

13	Dummies, dictators, & veto power		
14	Shapley-Shubik power index		
15	Banzhaf power index		

Gerrymandering

16	Determine possible outcomes		
17	Draw districts to achieve outcomes		
18	Efficiency gap		
19	Convex hull ratio		
20	Isoperimetric quotient		

Graph theory

21	Paths, degrees, connectedness		
22	"Imagine a graph" and answer questions		
23	Formal description of a graph		
24	Does an Euler circuit/path exist?		
25	Euler's sum-of-degrees theorem		
26	Draw an Euler circuit/path		
27	Draw a minimum duplication circuit/path		
28	Draw a Hamilton circuit, or say none exists		
29	TSP brute force		
30	TSP [repeated] nearest neighbor		
31	TSP sorted edges		

32	Math chat question		

Math chat question

Some time on or before September 18th, each student should submit one open-ended question about mathematics on Gradescope. It should not be a simple mathematical question with a simple answer, like "what is 8×12?" It might be a question *about* mathematics, like "is mathematics created or discovered?"

I am looking for questions that would make for interesting things to discuss among regular thoughtful people. Not requiring any special math knowledge, but stuff that anybody could understand. Philosophical questions about math in general, or practical questions about how and why mathematics is still being done in the modern world, or weird but interesting questions like "would aliens have the same math as us?".

Feel free to chat with your friends to get ideas. Don't ask AI.

If your question is minimally interesting, you will get full mastery credit for it. If I use your question as a springboard for a class discussion, I will give you one extra bonus mastery point for free.