Problem Sets Before Test 1

*Only turn in problems that are **not** bracketed.* Bracketed problems are additional problems you can look at. Round brackets indicate problems that may help you with problems that are assigned; square brackets are additional problems on material that you should know, but you are not required to write up solutions; curly brackets are truly optional and may contain extra nuggets that you will not be required to know but may be interested in.

Additional assignments will be filled in over time.

notation	meaning
unbracketed	assigned problem – turn these in for grading
()	helper/warm-up problem
[]	additional problems (you are responsible for content, but don't turn them in)
{}	covers optional material

Due	Task	Source	Problems
never	WW00	–	Intro to WebWork
Wed 1/12	miscellaneous	online	**1** Visit the class web page at https://rpruim.github.io/m252/S22/ **2** Fill out this pre-course survey **3** Check that you hae access to important course-related things: • Check that you can login to WebWorK using your usual Calvin login and password. • Check that you can access https://gradescope.com. You should also have received and email invite. • Check that you received an email from me addressed to the class. If any of these things are not working for you, let me know.
	PS 1	Rosen 10.1	(1) (3,5,7,9) types of graph **4** types of graph **8** types of graph **13** intersection graph **18** Fred **33** precedence graph
Fri 1/14	WW01	Rosen 10.2	
Mon 1/17	WW02	Rosen 10.3	
Wed 1/19	PS 2	Rosen 10.3	**9ace** special graphs [10–11] adjacency matrix **12** adjacency matrix [35–43 odd] isomorphic? **36** isomorphic? **38** isomorphic? **40** isomorphic?
Fri 1/21	PS 3	Rosen 10.4	**2** paths **6** components **12** strong/weak connectivity **14** components **22** isomorphic? **64** farmer puzzle **66** water puzzle [1] paths [3–5] [11] strong/weak connectivity [21, 23] isomorphic?

Due	Task	Source	Problems
Mon 1/24	PS 4	Rosen 10.5	**2–8 even** Euler paths/circuits **10** bridges **18** directed Euler **20** directed Euler **26** which have Euler circuits? **13–15** trace it [1–7 odd] Euler paths/circuits [19, 21] directed Euler Reminder: Your answers to homework in this class should typically include some sort of explanation. Answers like "Yes", "No", and "17", are rarely sufficient.
Fri 1/28	PS 5	Rosen 10.2	**22–25** bipartite? **26** bipartite?
		Rosen 10.7	**2–4** planar **12** regions [13] regions **14** vertices
		Rosen 10.RQ	**3** degree
Mon 1/31	PS 6	Rosen 10.7	**6–8** planar **23–25** Kuratowski
		Rosen 10.SE	**3–5** isomorphic? [29abcf] invariants
		Rosen 10.RQ	[1] types of graph [2] models [3–5] degree [6–7] graph examples [8] bipartite [9] graph representation [10] isomorphism [11] connected [12] checking isomorphism [13] Euler paths [14a] Hamilton paths [17] planar graph [18] Euler's formula [19] Kuratowski's Theorem
Wed 2/2	WW03	Rosen 6.1	
Fri 2/4	WW04	Rosen 6.2	
Mon 2/7	PS 7	Rosen 6.1	**28** license plates **48** bit strings **42** DNA **50** consecutive 0's [29–30] license plates [32–33] strings [41] photos [56] C variables
		Rosen 6.2	**4** balls **40** party
	WW05	Rosen 6.3	