Problem Sets

Graph Theory - MATH 247

February 24, 2023

Problem sets due at 5pm of the day indicated via the Canvas site. Please note that the first printing of the text has some typographical errors. I’ll try to alert these to you when I know about them.

1. Due Wednesday, February 22
   Read: Syllabus, Thoughts on Homework
   Read: textbook’s Preface and Prologue and Chapter 1
   Turn in (via Canvas site): Problems 2, 7, 9, 10, 12
   Note: In drawing the graphs from these problems, please draw such that structural characteristics are easily visible.

2. Due Friday, February 24
   Read: Chapter 2; Handout on Mathematical Induction; and the beginning of (p242-245, stopping at Corollary 1) “Weight Choosability of Graphs” by Bartnicki, Grytczuk and Niwczyk
   Turn in: Problems 2, 7, 8, 13, 19
   Also do: Problem 6, Prove Theorem 2.3 using induction on the number of distinct elements in the set

3. Due Friday, March 3
   Read: Chapter 3
   Turn in: Problems 5, 13, 17, 21, 23
   Install: software on a laptop so that you can use LaTeX. See the instructions on the course webpage. If this is not possible, please let me know. You will be asked to use LaTeX to typeset at least one problem from each future problem set, including this one.
   Also do: Problem 22; 25; and, Prove that every graph with no odd cycles is bipartite using induction on the number of vertices.