ORIE 6330 Network Flows	September 9, 2020

Problem Set 1

Due Date: September 23, 2020

Problems are drawn from *Network Flow Algorithms*, available at
`http://www.networkflowalgs.com/book.pdf`.

Since we are experimenting with technology this semester, I'm going to ask all HWs be submitted through Gradescope as a PDF. My first choice would be for each student to write up their solutions in LaTeX and submit that file. However, it is acceptable to scan or take a screenshot of a handwritten problem set; if the file is not a PDF, then convert it to PDF format before submission.

My understanding is that you should be able to access Gradescope via your Canvas account. Log into Canvas, navigate to the ORIE 6330 course, and there should be a navigation link to Gradescope in the course. You should be able to get to Gradescope by following this link.

A reminder on collaboration: Your work on problem sets and exams should be your own. You may discuss approaches to problems with other students, but as a general guideline, such discussions may not involve taking notes. You must write up solutions on your own independently, and acknowledge anyone with whom you discussed the problem. You should not try to look up solutions through published papers or the web.

1. W 2.2

2. W 2.5

3. W 2.6. For this problem, prove that the number of max flow computations is $O(\log nW)$.

4. W 2.7