Network Optimization (Fall 2024): Homework 5

- AMO stands for the text (Ahuja, Magnanti, Orlin). Exercises and page numbers are listed from AMO.
- Exercises marked with a **[G]** target the graduate students (Math 566), but undergrads (Math 466) can attempt them for extra credit.
- The total points (given in parentheses) add up to 120. Math 566 students will be graded for 115 points, and Math 466 students for 90 points.
- **You must email your submission as a PDF file to kbala@wsu.edu**. You are welcome to write answers by hand, and scan the writings (or take pictures of your writings) **into a PDF file**.
- **Your file name should identify you in the following manner. If you are Alphonse Maphesto, you should name your submission AlphonseMaphesto_Hw5.pdf. If you want to add more bits to the title, e.g., Math566, you could name it AlphonseMaphesto_Math566_Hw5.pdf, for instance. But you should start the file name with AlphonseMaphesto. And please avoid white spaces in the file name.**
- **Begin the SUBJECT of your email submission with the same `FirstnameLastname`, expression, e.g., "AlphonseMaphesto Hw5 submission".**
- **This homework is due by 11:59 PM on Thursday, September 26.**

1. (20) AMO 3.48 (page 92).
   The imbalance $e(i)$ of node i is equivalent to $b(i)$, and can be calculated using the flow-balance equation for node i as outflow$-$inflow.
2. (30) **[G]** AMO 3.52 (page 92).
3. (25) AMO 4.6 (page 125).
4. (20) AMO 4.19 (page 128).
5. (25) AMO 4.21 (page 128).