Homework for Lecture 21 (Due Dec. 6, 2023, 10:00pm) of Linear Optiomization (Math 354), Fall 2023 (Dr. Z.)

1. For the following network, with six vertices where 1 is the source, and 6 is the sink, the capacity matrix is

$$\begin{bmatrix} 0 & 9 & 8 & 0 & 0 & 0 \\ 0 & 0 & 8 & 4 & 4 & 0 \\ 0 & 2 & 0 & 0 & 5 & 2 \\ 0 & 0 & 0 & 0 & 0 & 5 \\ 0 & 0 & 0 & 0 & 0 & 6 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} .$$

(a) Draw it (b) Find a maximal flow, by starting with the zero flow, and keep improving it, by repeatedly finding augmmenting paths. Do **not** use the labelling algorithm, but rather find augmenting paths by inspection. What is the value of the maximal flow that you found?