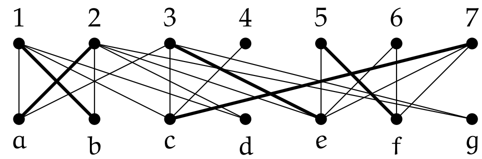
Our Hungarian Method

Use "Our Hungarian Method" to find a maximum matching in the bipartite graph below:

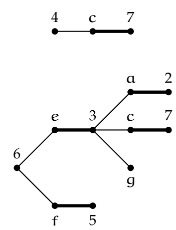


Run #1

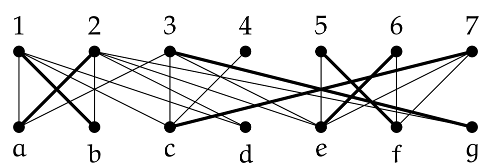
Vertices Not Saturated

$$X_0 = \{4, 6\}$$
$$Y_0 = \{d, g\}$$

Hungarian Forest



Flip Augmenting Path

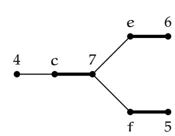


Run #2

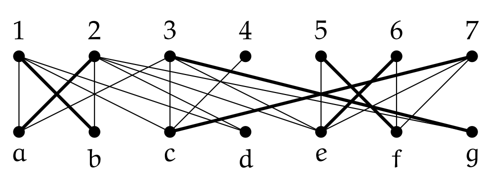
Vertices Not Saturated

$$X_0 = \{4\}$$
$$Y_0 = \{d\}$$

Hungarian Forest

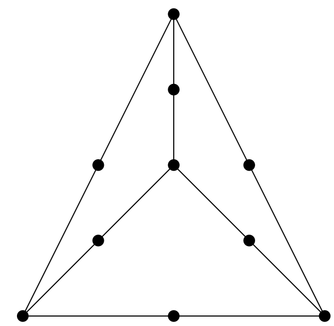


End Algorithm Since our Hungarian Forest has no M-augmenting path, the following matching is a maximum matching in the graph.

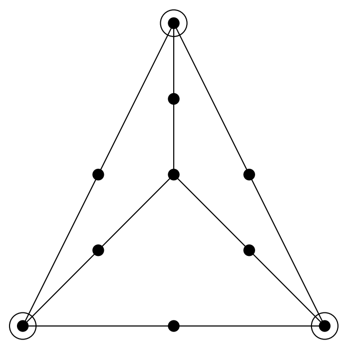


3.3.1

Determine whether the following graph has a 1-factor.



By letting S be the following set of vertices, we find that the graph does not satisfy Tutte's Condition, meaning there is no 1-factor in the graph:



3.3.2

Exhibit a maximum matching in the graph below, and use a result in this section to give a short proof that it has no larger matching.