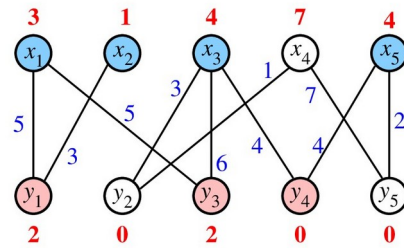
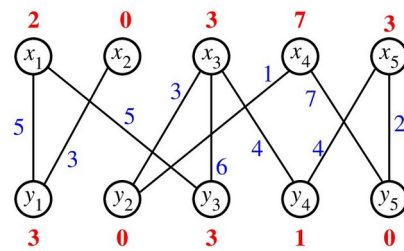


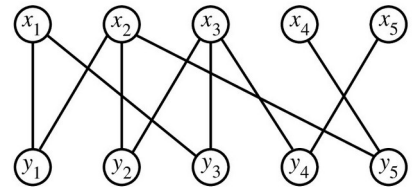
## Variant 1



Input graph before relabeling

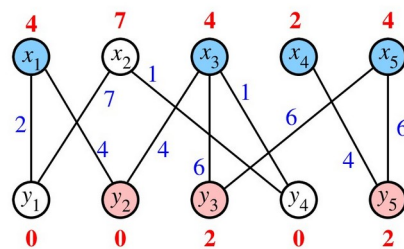


Updated graph after relabeling

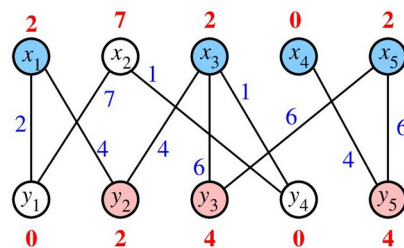


The resulting equality graph

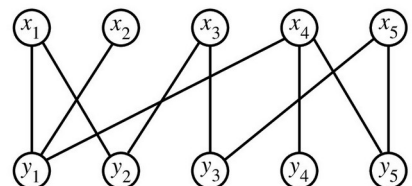
## Variant 2



Input graph before relabeling



Updated graph after relabeling



The resulting equality graph

## Grading Guidelines

Updated labels:

[ $\alpha = 1$  for Variant 1, and  $\alpha = 2$  for Variant 2, but the students are not needed to show this or the calculations]

1 mark for correct updated labels of vertices in S

1 mark for correct updated labels of vertices in  $X - S$

1 mark for correct updated labels of vertices in T

1 mark for correct updated labels of vertices in  $Y - T$

Equality graph:

2 marks for the edges of non-zero weights

2 marks for the edges of zero weight