1) 1 step
2) N steps
3) 1 step
4) 1 step
5) 1 step
6) 1 step
7) 1 step
8) N + 1 steps \\ N for iterating over all the nodes and 1 step to make the comparison of the size
9) 1 step
10) MN + m steps \\ MN to compute the difference between two sets and m to check the edges
11) 1 step
12) 1 step
13) 1step
14) 1 step
15) 1 step
16) 1 step

Steps 1-7: 6 + N steps

Steps 8-15: {(N+1) [(MN + M)4]+1}

Step 16: 1

Total: 7 + N + 4MNN +4MN +4MN +4M +(N + 1)

Runtime: N + MNN + MN +MN + M + N

Big O-Notion: $O(MN^2)$