

1. In the following example, what is the value of the max-weight independent set, and that of the output of our greedy algorithm

1-4-5-4

1. 14 and 10
2. 8 and 6
3. 8 and 8
4. 9 and 8

(2) is the correct answer. The maximum independent set are the vertices with weights 4 and 4. The greedy algorithm would select the largest weight vertex and from there select any maximum weight vertex that is still valid. This would result in a total weight of 6. This shows that a greedy approach the problem will not be optimal