Midterm - Due October 9, 2000 in class

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1 A Greedy Problem

In class, we discovered a greedy strategy to find the Minimum Spanning Tree (MST) of a graph. It is important to note that the MST of a graph is not unique. For example, the graph in Figure (1) has two MSTs, viz. those displayed in Figures (2) and (3). Prove that when all edge weights of the graph are distinct, the MST must be unique i.e. there is exactly one MST

Hint: Kruskal's Algorithm

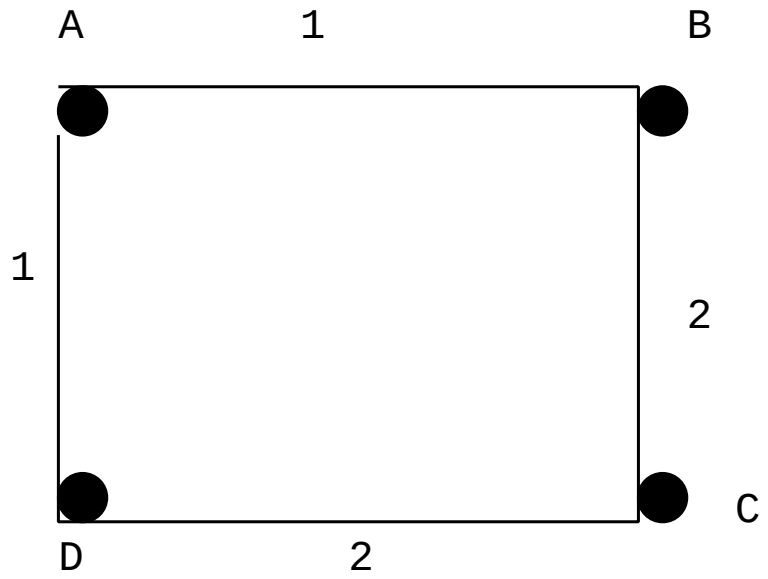

Figure 1: Input Graph

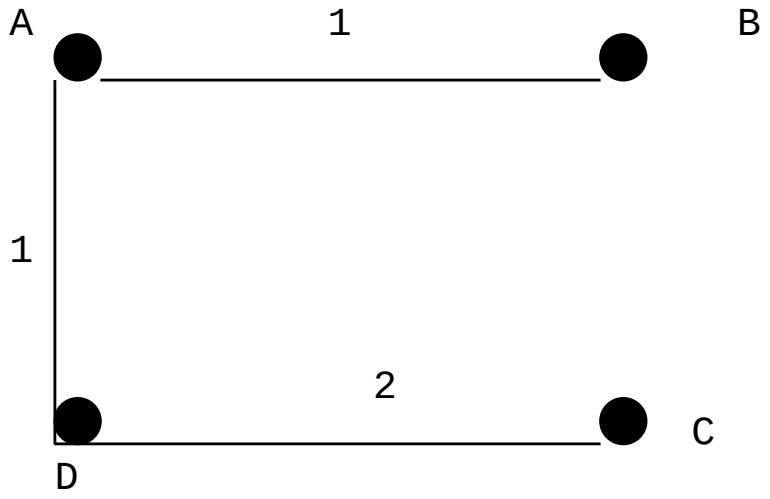

Figure 2: A Minimum Spanning Tree

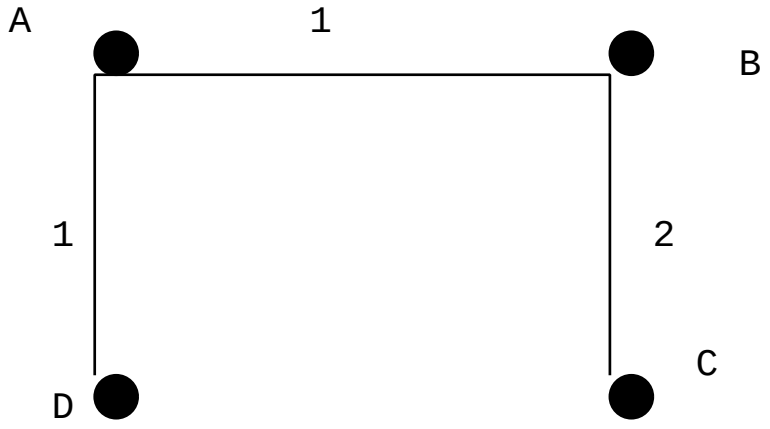

Figure 3: Yet another Minimum Spanning Tree