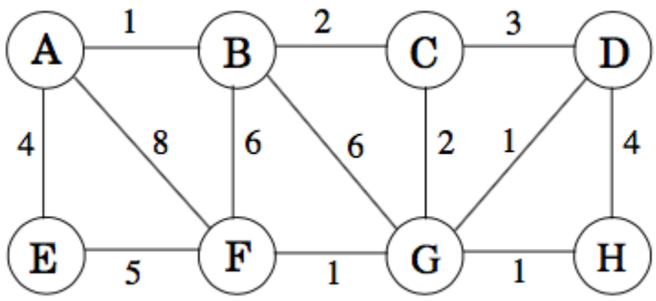
CSE 207
CT 1-SET C
Date: 07/12/2021
Time: 20 minutes

Name:_____ **ID:**_____

1. How many minimum spanning trees does it have?



2. The following statements may or may not be correct. In each case, either prove it (if it is correct) or give a counterexample (if it isn't correct). Always assume that the graph G = (V, E) is undirected. Do not assume that edge weights are distinct unless this is specifically stated.

   Prim's algorithm works correctly when there are negative edges.

3. Suppose you have algorithms with the two running times listed below. (Assume these are the exact running times.) How much slower do each of these algorithms get when you (a) double the input size, or (b) increase the input size by one?
   (i) n^2
   (ii) nlogn