

1. Draw a tree below using the vertices provided.

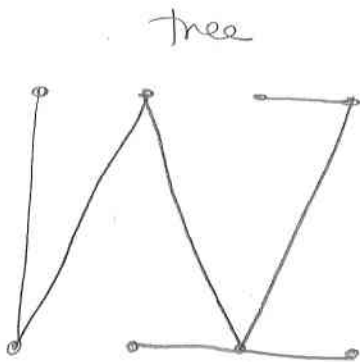


answers will vary

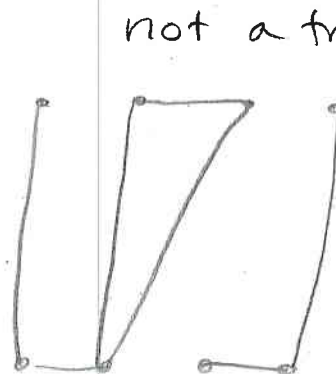
2. What are some of the characteristics of a graph that will make the graph a tree? List at least two properties.

the graph is connected w/ n vertices & $n-1$ edges
 no circuits
 every edge is a bridge

3. Suppose that we know that graph G has 8 vertices and 7 edges. However, this is not enough information to determine if G is a tree. Give one example of a graph where G is a tree, and another example where G is not a tree in the space below.



connected
 no circuits



not connected
 has a circuit

4. Is Kruskal's algorithm optimal or approximate? Efficient or inefficient?

optimal, efficient