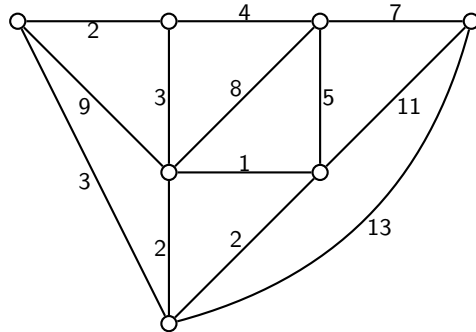
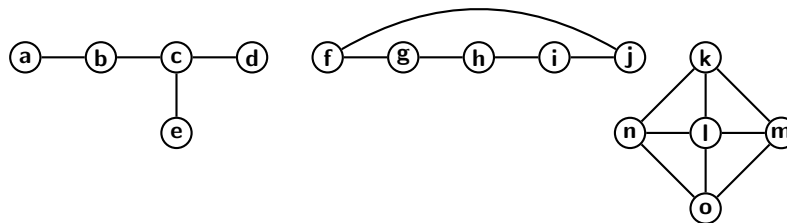


Spanning Trees

- Use any algorithm to find a minimal spanning tree in the following graph:



- How many spanning trees do the following graphs have?



(Note that these are labeled graphs, so we can have many different spanning trees; $f-g-h-i-j$ and $g-h-i-j-f$ are considered different spanning trees.)

- Give an example of a (weighted) graph that has multiple distinct minimal spanning trees.
- Suppose a graph G has a unique least-weighted edge e . Show that e is contained in any minimal spanning tree.