

Connectivity

We can discuss connectivity in directed graphs:

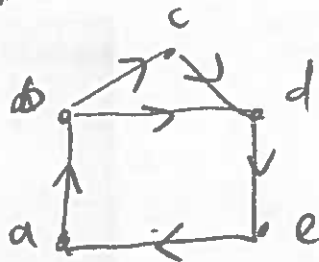
Def: A directed graph is strongly connected if there is path from a to b & from b to a for any a, b in the graph.

That is exactly what we think of connected for undirected, except we respect the direction of edges.

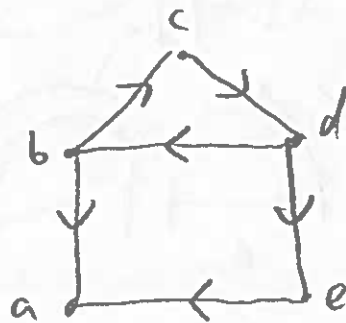
Def: A directed graph is weakly connected if there is a path between every two vertices in the underlying undirected graph.

Ex: Consider

G :



H :

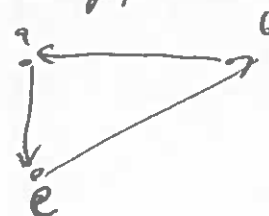
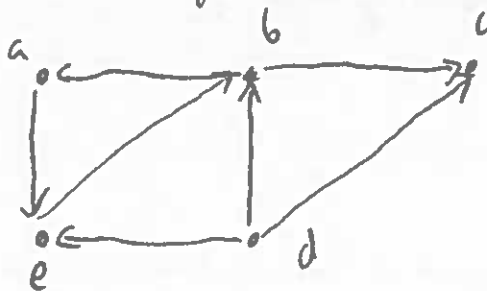


are either of these strongly connected? weakly?

Both are weakly connected. H is not strongly since there is no path $a \rightarrow b$.

But G is strongly connected.

Ex: Find the strongly connected components of G the sections of this graph which are strongly connected:



Can't include c , no way to get out of it.
Can't include e , no way to get out of it.