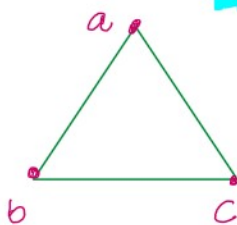


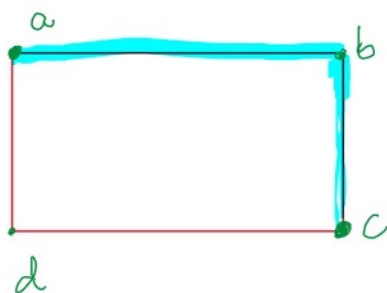
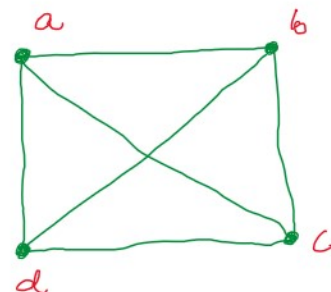
Connected graph :-

A graph is s.t.b Connected if there exists a path between every pair of its vertices.

e.g

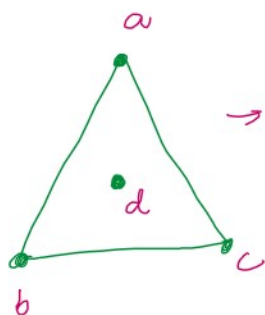


→ Connected graph

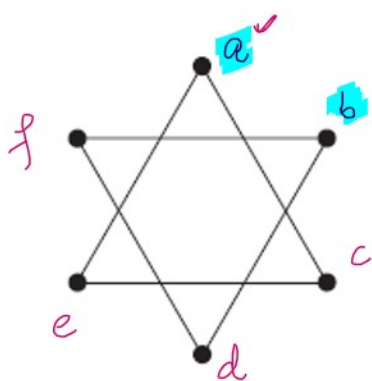


→ Connected graph

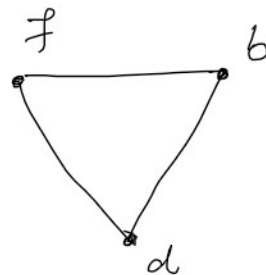
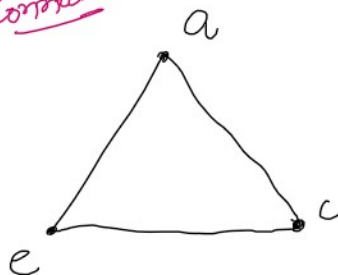
#



→ Not Connected as there is no path from a to d.



→ Not Connected



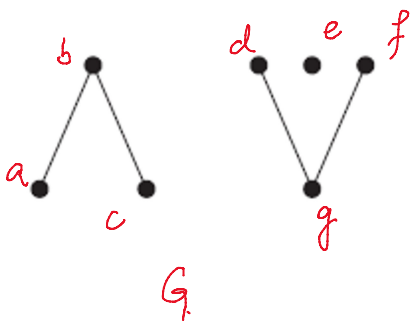
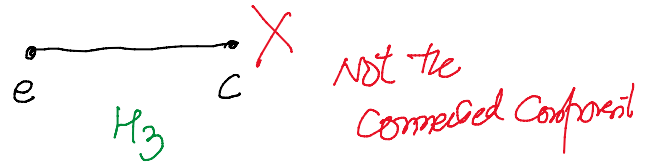
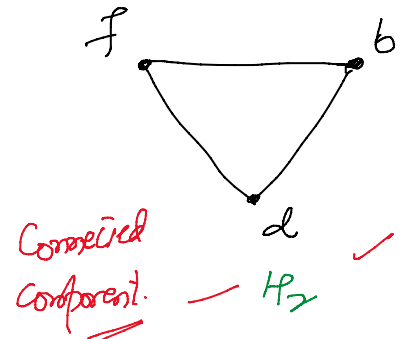
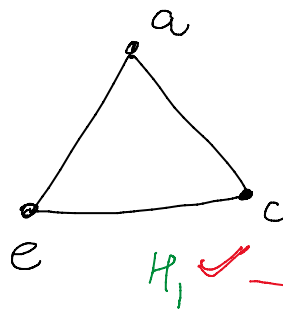
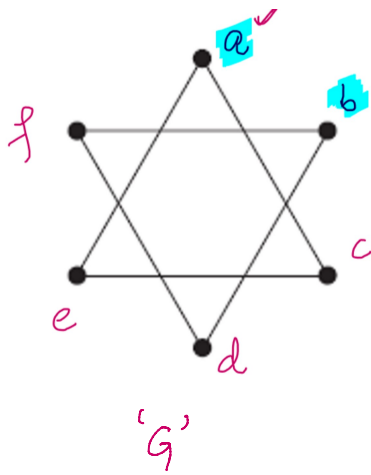
# Connected Component of a graph :-

A Connected Component of a graph  $G$  is the subgraph  $H$  of  $G$  which is Connected and which is not contained in any larger Connected subgraph of  $G$ .

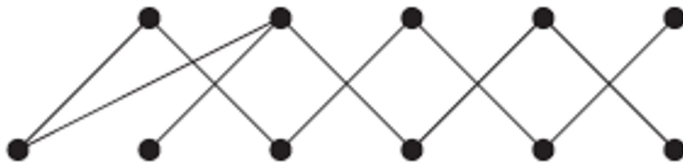
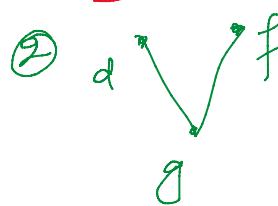
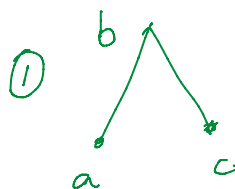
larger connected subgraph of  $G$ .

$H$  is the Connected Component of  $G$  if

- ①  $H$  is a subgraph which is connected
- ②  $H$  is not contained in any larger connected subgraph of  $G$ .



The no. of Connected Components  
= 3 ✓

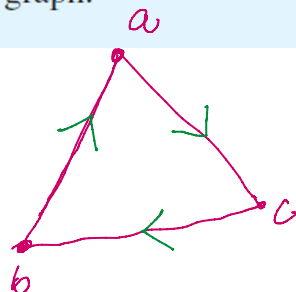


# The no. of Connected Component of a Connected graph is 1.  
(the graph itself)

Connectivity in Disconnected Graph

# Connectivity in Disconnected Graph

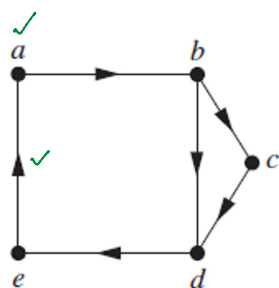
A directed graph is *strongly connected* if there is a path from  $a$  to  $b$  and from  $b$  to  $a$  whenever  $a$  and  $b$  are vertices in the graph.



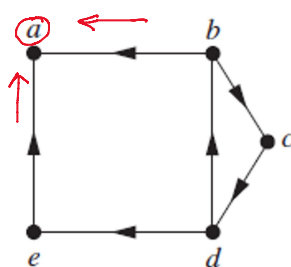
strongly Connected

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

strongly Connected  $\Rightarrow$  weakly Connected  
but the converse is not true



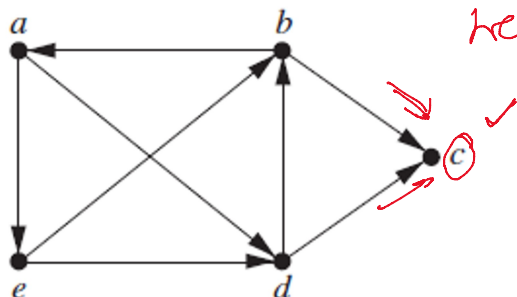
G



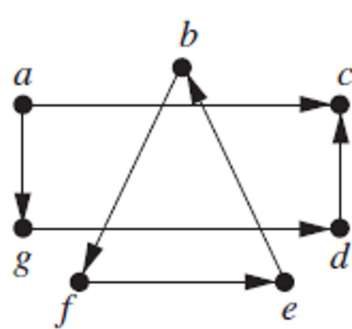
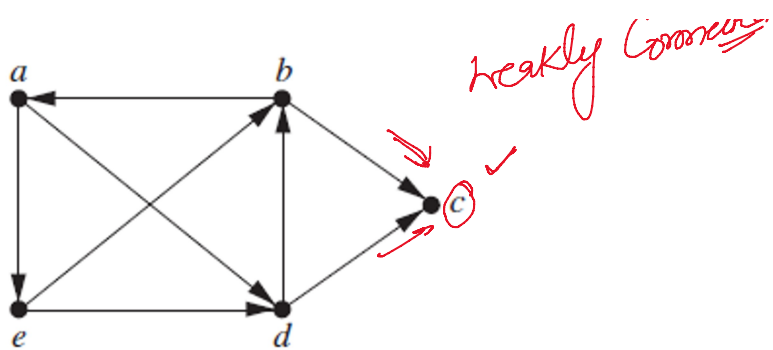
H

strongly Connected

weakly Connected



weakly Connected



Not a Connected

