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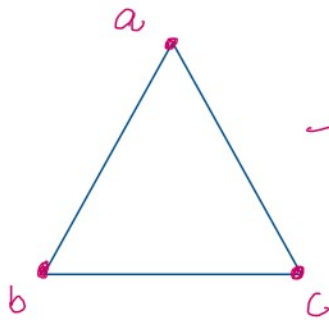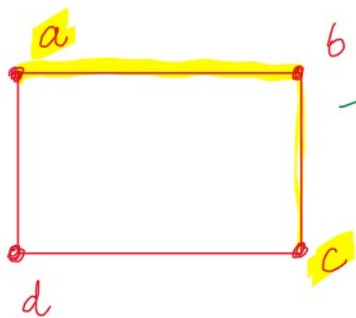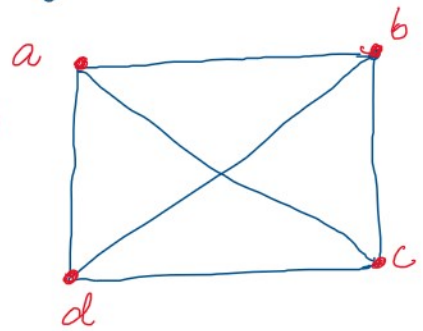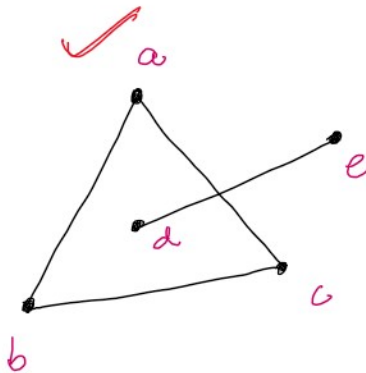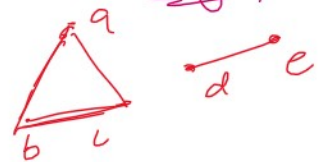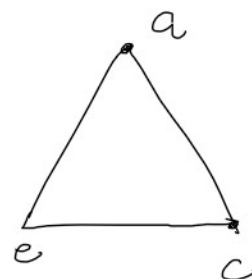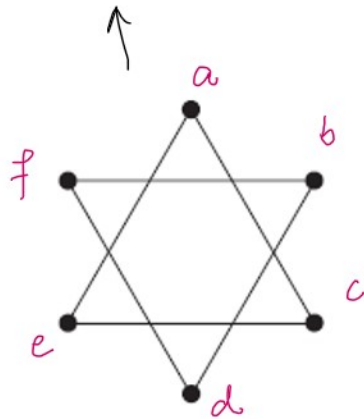


→ Connected graph ←
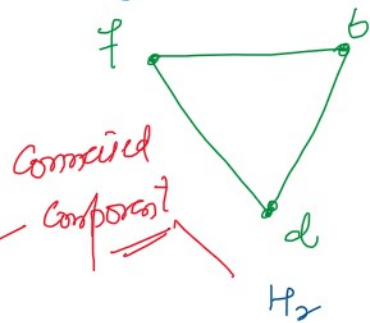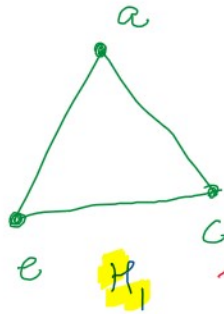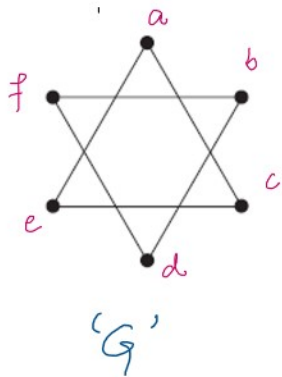
→ Connected graph

→ Not Connected graph

→

Not Connected

# Connected Component of a graph :→

'G'

• $v_1$

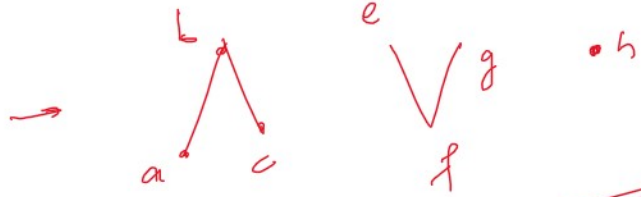A Connected Component of a graph G is the subgraph H of G which is
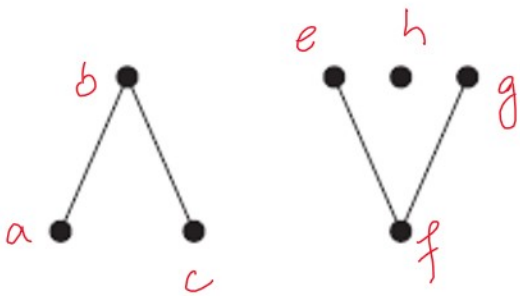
① Connected

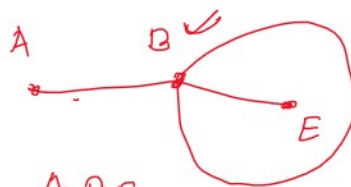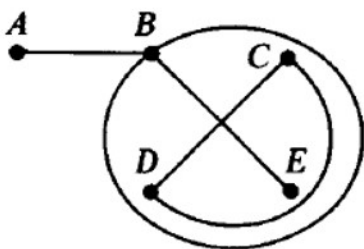② <mark>Not Contained in any larger Connected subgraph</mark> <mark>of G.</mark>



'G'



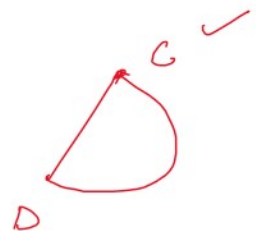$H_1$     Connected Component     $H_2$



$H_3$  ✗     $H_3$ is subgraph of G
$H_3$ is Connected



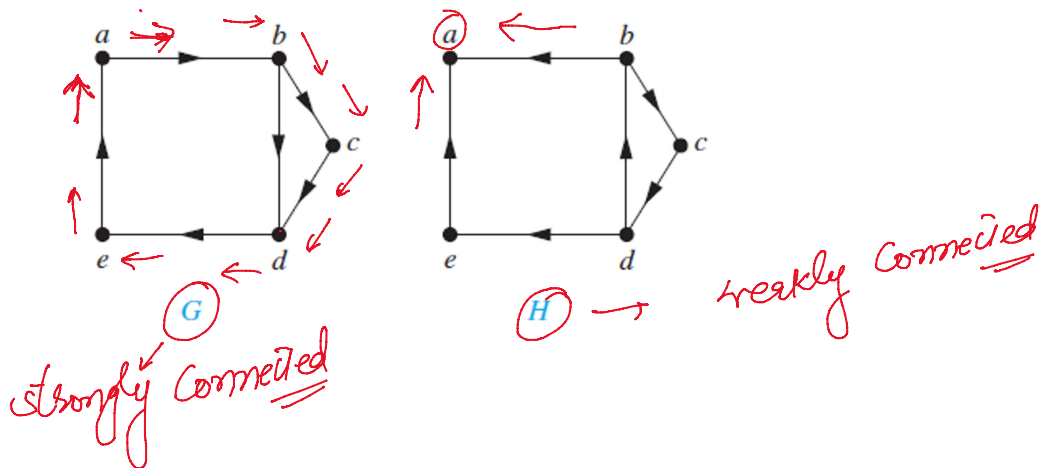③ Connected Components ✓



A B E
2 Connected Components

\# The no. of Connected
C..... of a Connected
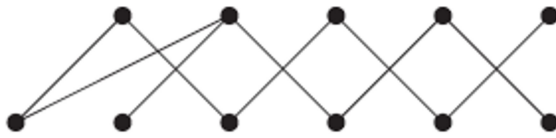
A directed graph is *strongly connected* if there is a path from *a* to *b* and from *b* to *a* whenever *a* and *b* are vertices in the graph.

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



strongly Connected

weakly Connected

weakly Connected graph

Not a Connected graph

Not a Conser-
graph