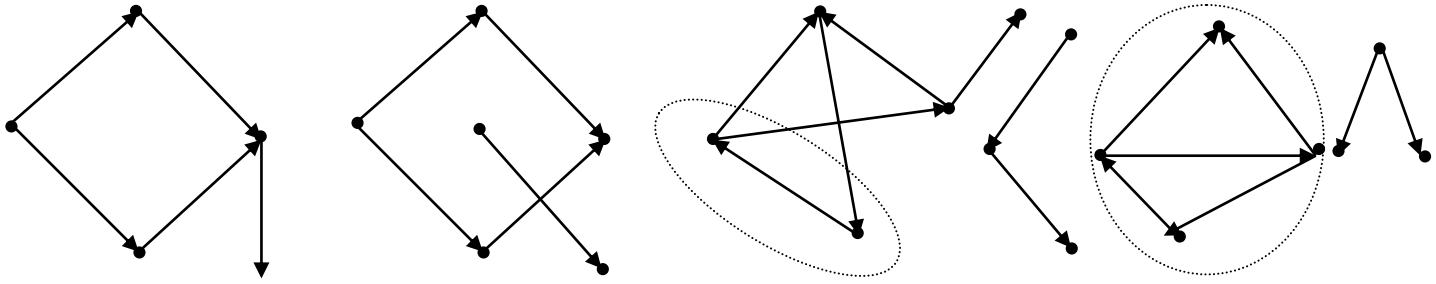
Mohamed Boudiaf University of M'sila
Faculty of Mathematics and Computer Science
Department: Computer Science
Subject Responsible: Dr. Said GADRI

Subject: Graph Theory/L2-LMD

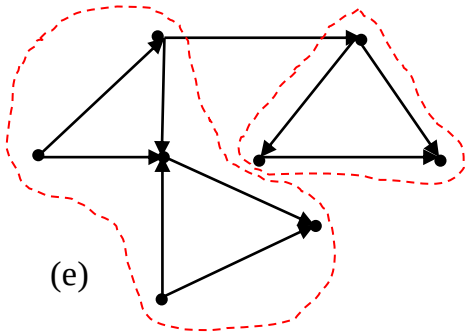
TUTORIALS - SERIES NO. 02

EXERCISE N° 01

Study the connectivity in the following graphs:



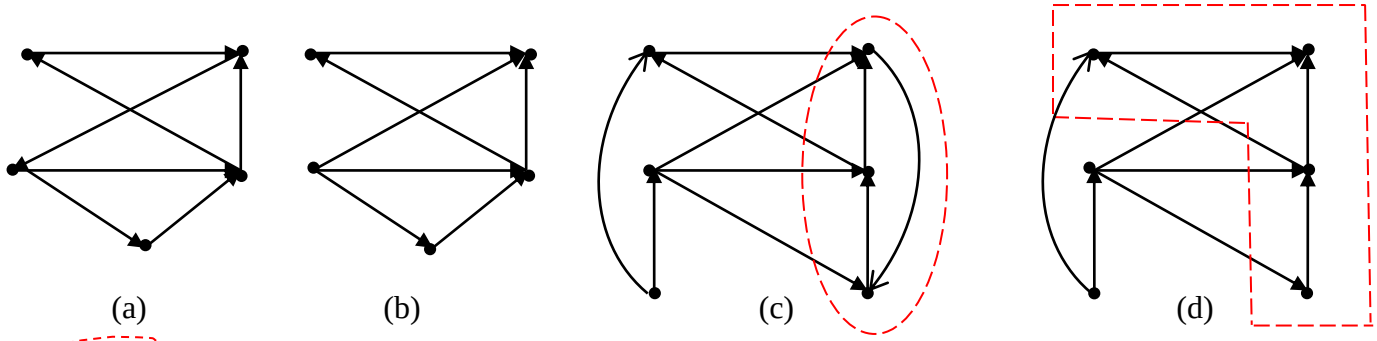
(a) (b) (c) (d)



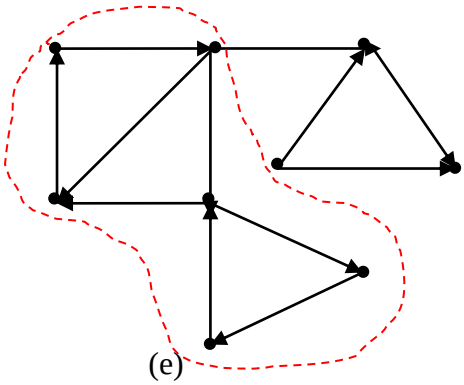
(e)

EXERCISE N° 02

Study the strong connectivity in the following graphs:



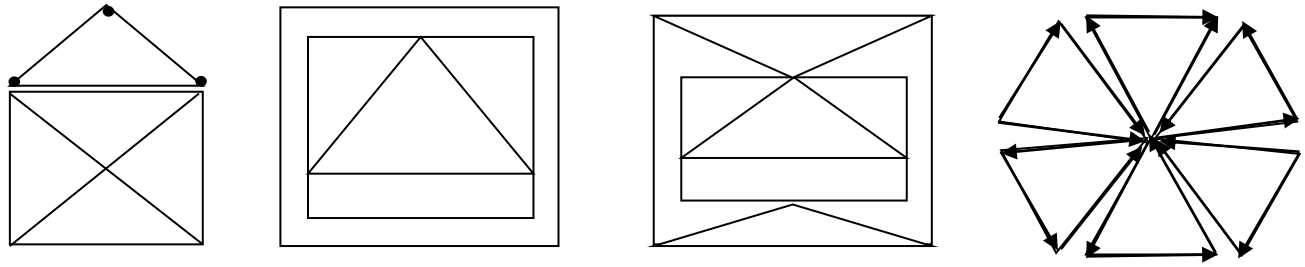
(a) (b) (c) (d)



(e)

EXERCISE N° 03

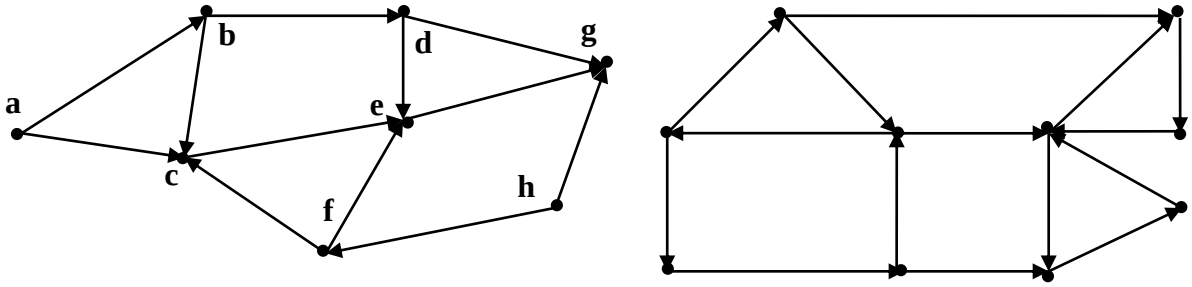
Study the connectivity and strong connectivity in the graphs below:



(a) (b) (c) (d)

EXERCISE N° 04

Let G1(X1,U1), G1(X1,U1) be two directed graphs



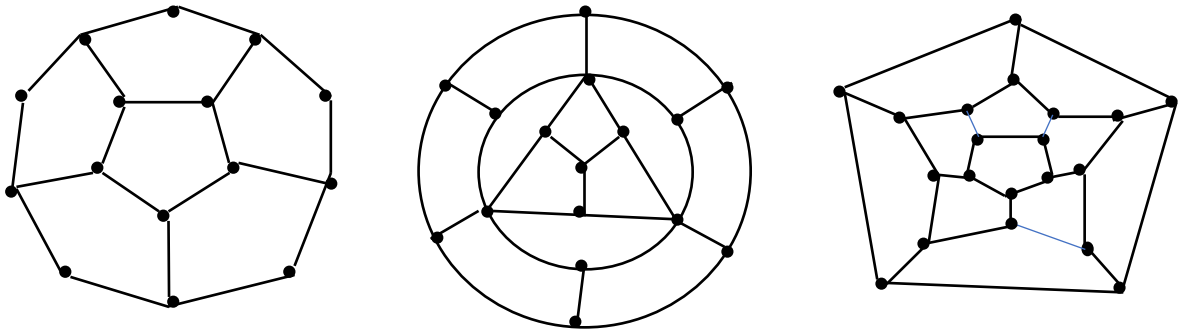
(a) – Use the algorithm for constructing a simply connected component to determine the component containing each of the vertices: a, d, g in G1

(b) – Use the strongly connected component construction algorithm to determine the strongly connected component containing each of the vertices: b, c, f in G1

(c) Apply the CFC construction algorithm to find the CFCs of: e, g, i

Exercise 05

Among the figures below, give the one which represents a Hamiltonian graph?



EXERCISE N° 06

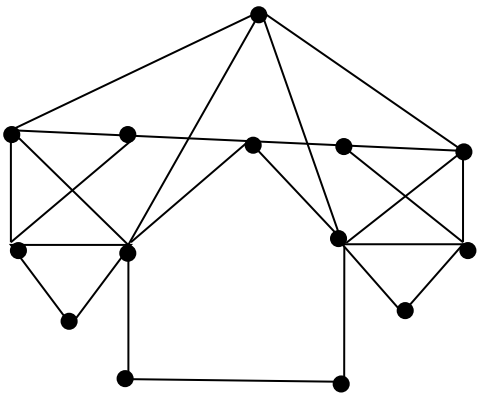
Find in the graph below:

a) A Hamiltonian chain

a) A Hamiltonian cycle

b) A Eulerian chain

c) A Eulerian cycle



Good Luck