lec #22.
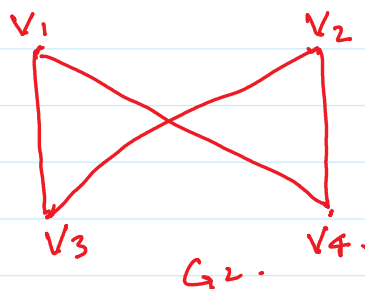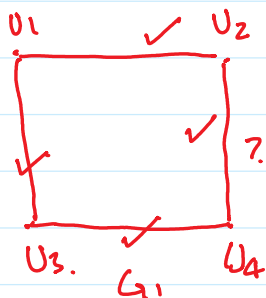
Isomorphism.

$$G_1 = (V_1, E_1) \qquad G_2 = (V_2, E_2).$$

if $\exists f$ V_2 to V_2. with a property that
a, b are adjacent in $G_2 \to f(a)$ & $f(b)$
are in u u G_2.

Ex8 :-
9553

G_1 G_2.

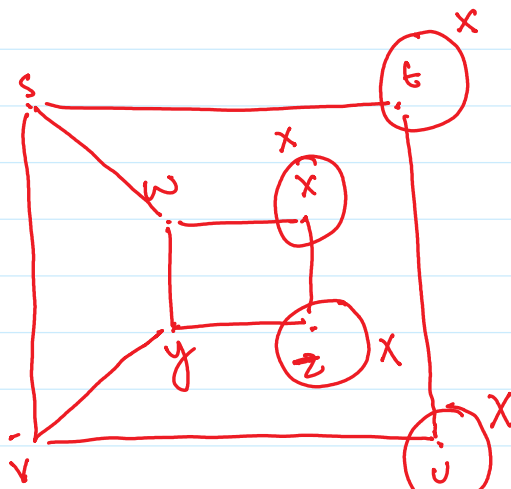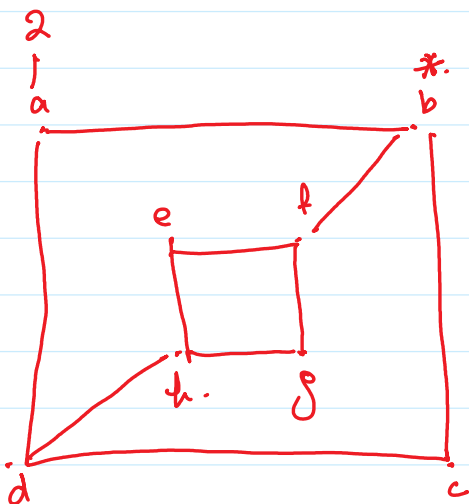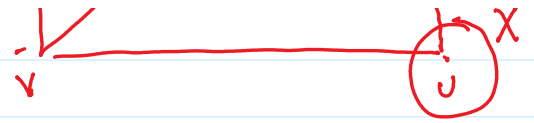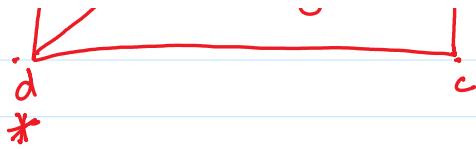|	
$f(U_1) = V_1$	$\checkmark (U_1, U_2)$ $(f(U_1) = V_1, f(U_2) = V_4)$
$f(U_2) = V_4$	(U_1, U_3) $(f(U_1) = V_1, f(U_3) = V_3)$.
$f(U_3) = V_3$	(U_3, U_4) $(f(U_3) = V_3, f(U_4) = V_2)$.
$f(U_4) = V_2$.	$\checkmark$.

How to check Isomorphism.

Step 1 :- Vertices Should be equal in #.
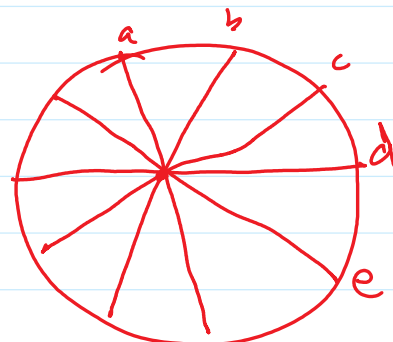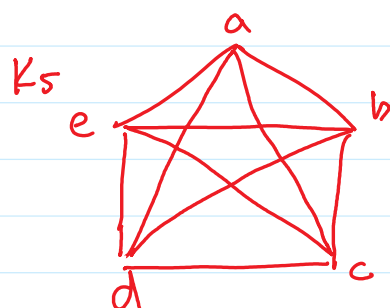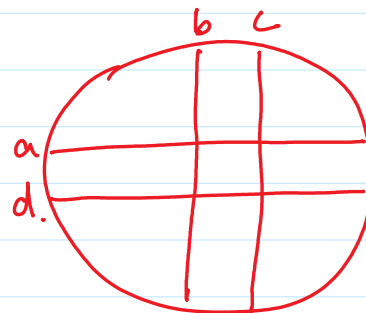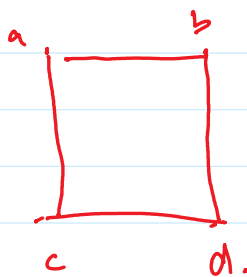Step 2 :- Edges   "   u   u   u u .
Step 3 :- Degrees in the two graphs must match.

d *

c

v

X
j

Step 4:- Adjacent Degrees.

Circular Graph

a — b
c — d.

d c b.
a

a b c.
d
e
f.

a — b
c — d.

b c
a
d.

K_5
a
e b
d c

a b
c
d
e
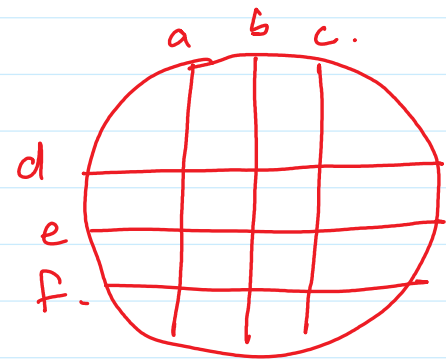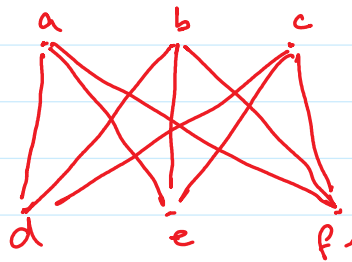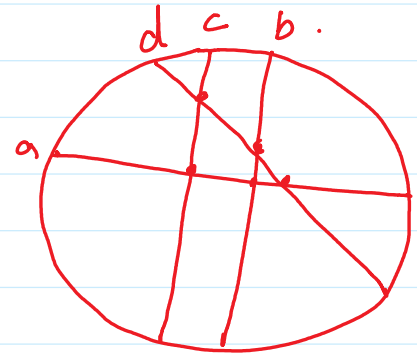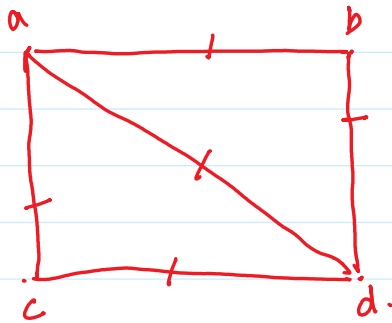
d ———— c

Representations of Graphs (Simple).

1- Adjacency List   2- Adjacency Matrix   3- Incidence Matrix   4- Circular.

5- Visual Diagram.