Homework 4

1. A)

For vertex (v) in IC :

for edges (e) connected to vertex (v) :

for vertex in n:

if 1 and vertex is not v add vertex and edge to graph

B)

The advantages of an incidence matrix are that the edges are identified and could be named by their weights. For example, the edge weighted 7 could be in the seventh column of the incidence matrix. However, a disadvantage is there is no way of showing direction or indirection. An adjacency matrix could have the indegrees for a vertex in rows and outdegrees in columns, where as a incidence matrix could not.

1. A)

Good\_nodes = empty arr

For rows in adjacency matrix:

first\_time = FALSE

For x in row:

if x is 0:

first\_time = TRUE

if x is 0 AND first\_time == true:

break

if x is last in row and (first\_time=FALSE OR x is 1):

add row to good\_nodes

if good\_nodes length = 0, return Yucca = false

For node in good\_nodes:

For x in column of node:

If x is 1:

Break

If x is last in column AND x is 0:

Return Yucca = true

Return Yucca = false

B) SEE ADJACENCY\_MATRIX.java FOR PROGRAM