EECS 114 Written Assignment 3

1.1) Adi Matrix_ Prim (G, W, r)

T = Er3 -> this is the minimum spon thee

for each wertex in the graph 1 to ach outgoing edge from 1

ACID = (r, w(r,i)) > A holds on edge from i to 1

For each vertex not in the three

2 = ACIJ = which is the minimum weight to next vertex

T += 2

2. Parent = ACIJ. 100t => set farent to beginning vertex of ACI

for each vertex in the graph

If Adi[2,i] = 0 and Adi[2,i] < ACIJ. weight then

ACIJ = (2, Adi[2,i])

1.2) We must first add all the new edges to V of the graph. Then we call DFS with the new vertex as the root. If a cycle is detected, Remove the edge with the greatest weight. Remove the greatest edge with there are one less than the degree of the new vertex. This can be done is linear time since the graph is already topilogically sorted.

1.3) Source: 2

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9	00 Null	\otimes	Null	9	S	9	S	9	S
2	O Null	0	Null	0	Nul	0	Null	0	Null

Source: S

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1.5) flow=
$$11+1+7+4-4=19$$

Capacity= $16+4+7+4=31$