CS340 => Assignment 8

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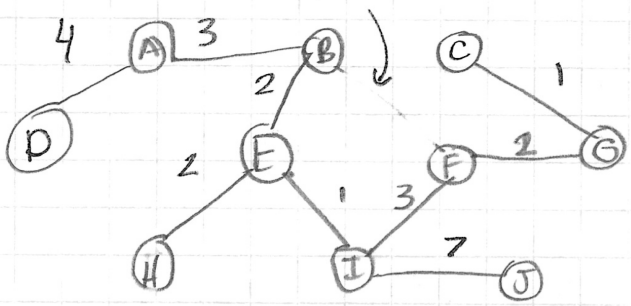
Problem 1)

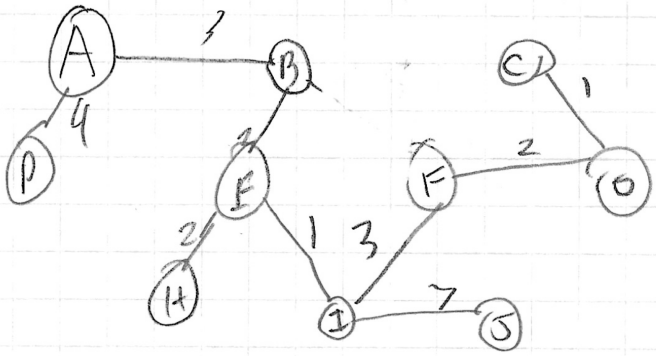
removed but cosme. (3).

(a) Kruskals:



(E,I),(G,F),(E,G),(E,H),(B,E),(A,B),(F,I),(A,D),(I,J)

Prims:



(A,B),(B,E),(E,I),(E,H),(I,F),(F,G),(G,C),(A,D),(I,J)

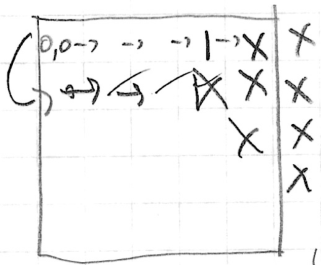
(b) No, there is the same cost choice present B -> F or F -> I therefore many minimum spanning trees can be made.

Problem 2)

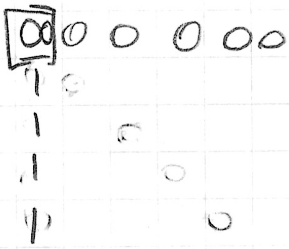
(a) A,B,C,E,G,D,F

(b) A,B,C,D,F,E,G

Problem 3)



if we fin a 1 after it and diagonal from it no longe possible.



a) Set i & j = 0

b) While i < |V| & j < |V|
   if A(i,j) = 0 then increment J otherwise incr i

c) if j < V then if all row is 0 if yes its yes

d) if j < V, then chec if colm is all ones expect in diangel
   then return yes

e) else ~~sdty~~ no / return no.

* together i + j will only increment a total of V times

∴ $\Theta(|V|)$.

Problem 4) if P is in a graph G, and $k \leq |V|$
the output reduction map p' consist of
$G', (V', E')$ and intege $k' |V|$

$k' = k$
$V' = V$

$E' =$ ~~[illegible]~~
$= \{(v, w) \text{ in } V' \times V \mid (v, w) \notin E\}$

makes pairs of times on E but not original.

???