Laporan Praktikum

Tree 1 dan 2

1031102 – Discrete Mathematics

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Diploma III Teknologi Informasi IT Del 2021

Sitoluama, Laguboti 2021

No.

Date

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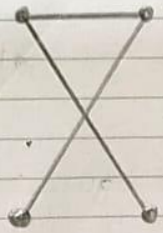
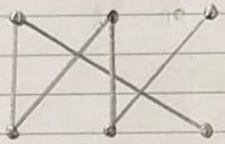
Soal

1. which of these graph are trees?

a) 

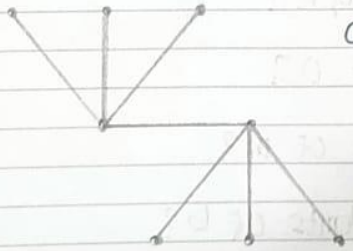
answer : Pohon

b) 

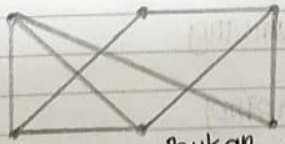
answer : Pohon

c) 

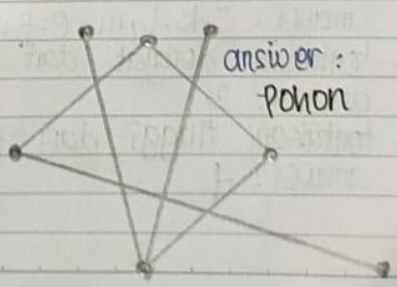
answer : Bukan pohon

d) 

answer : Pohon

e) 

answer : Bukan pohon

f) 

answer : Pohon

No.

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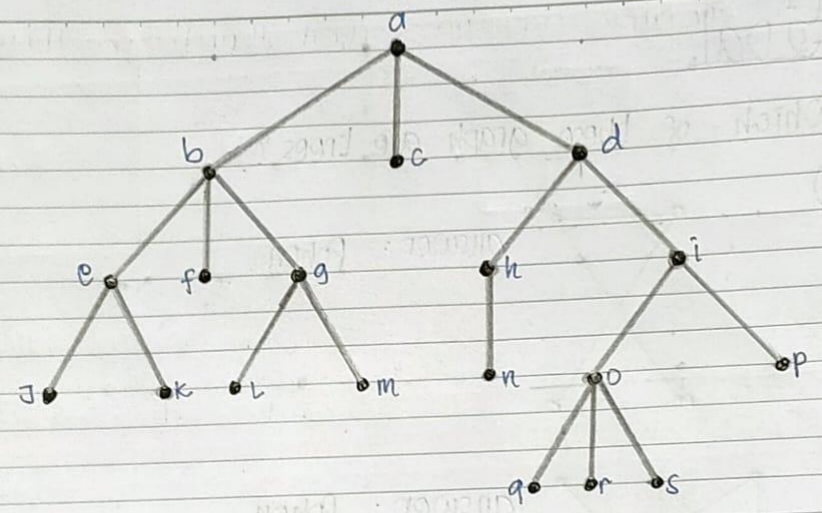
2)



a. which vertex is the root ?
answer : a

b. which vertices are internal?
answer : b, d, e, g, h, i, o

c. which vertices are leaves?
answer : j, k, f, l, m, c, n, p, q, r, s

d. which vertices are children of j?
answer : node j derivative has no

e. which vertex is the parents of h?
answer : d

f. which vertices are siblings of o?
answer : p

g. which vertices are ancentors of m?
answer : b, g, a

h. which vertices are descendants of b?
answer : j, k, l, m, e, f, g.

i. tentukan derajat dari pohon di samping
answer: 3

j. tentukan tinggi dari pohon di samping
answer: 4

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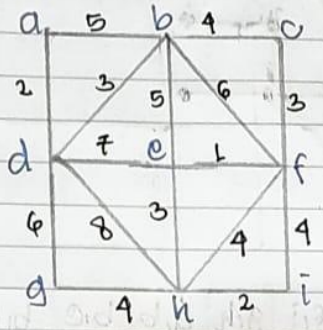
3) Use algoritm prim dan kruskal to find a minimum spanning tree for the given weighted graph.



answer :

* Algoritma prim :

Sisi	Bobot	Pohon merentang
a, d	2	
d, b	3	
b, c	4	
c, f	3	
e, f	1	
e, h	3	
h, i	2	

No.

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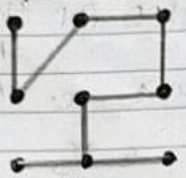
Sisi	Bobot	pohon merentang
h, g	4	

* Algoritma kruskal

Sisi	e,f	a,d	h,i	b,d	c,f	e,h	b,c	f,h	f,i	g,h	a,b	b,e	b,f
Bobot	1	2	2	3	3	3	4	4	4	4	5	5	6

d,g	d,e	d,h
6	7	8

Pohon merentang :

a b c d e f g h i

e,f	1	a b c d g h i e f
a,d	2	a b c g h i d e f
h,i	2	a b c g d e f h i
b,d	3	a b c g d e f h i

No.

Date

Dame Sisri Rumapea

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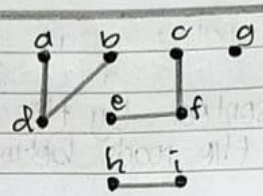
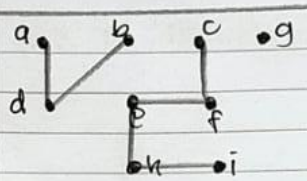
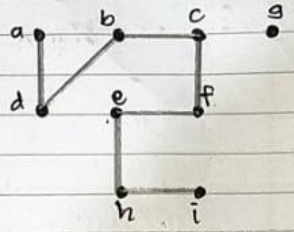
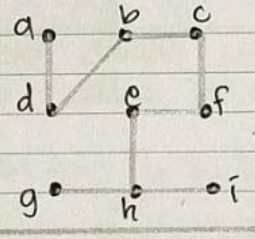
c, f	3	
e, h	3	
b, c	4	
f, h	4	Ditolak (membentuk sirkuit)
f, i	4	Ditolak (membentuk sirkuit)
g, h	4	

Bobot pohon merentang minimumnya adalah

1 + 2 + 2 + 3 + 3 + 3 + 4 + 4 = 22

No.

Date

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4. The roads represented by this graph are all unpaved. The lenghts of the roads between pairs of towns are represented by edge weights. which roads between each pair of towns so that a minimum road length is paved ?
(Note : These towns are in nevada)

Answer :

Sisi	Bobot	keterangan
Oasis - Deep springs	10	Diterima
Lida - Gold point	12	Diterima
Lida - Goldfield	20	Diterima
Silver pea - Goldfield	20	Diterima
Dyer - Oasis	21	Diterima
Silver pea - Oasis	23	Diterima
Oasis - Lida	25	Ditolak
Dyer - silver pea	25	Ditolak
Tonopath - Manhattan	25	Diterima
Deep springs - Goldpoint	30	Ditolak
Gold field - Tonopath	35	Diterima
Silver pea - Tonopath	40	Ditolak
Gold point - Beatty	45	Diterima
Tonopath - Warm springs	55	Diterima

Jalan yang diaspal sesuai dengan gambar jalan aspal minimum yang saya gambar bobot aspal minimumnya adalah

⇒ 10 + 12 + 20 + 20 + 21 + 23 + 25 + 35 + 45 + 55

⇒ 266

m = sisi
n = simpul

m = n - 1
m = 11 - 1
m = 110

No.

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Berikut jalan bercapal minimum yang dihasilkan: