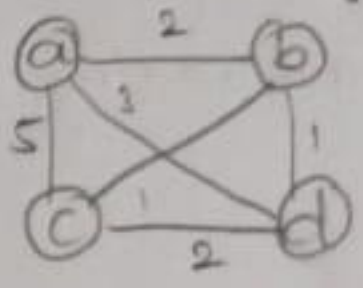
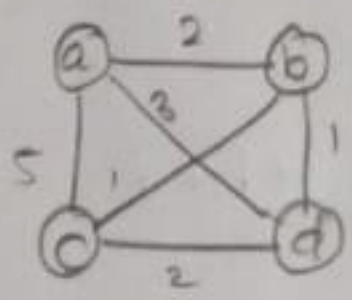
P.V.S Sucharitha
19231110 3
CSA0669

Analytical Assignment:-04

Apply Prim's algorithm to solve the minimum spanning tree for the given graph. Also compute the total cost of all edges.

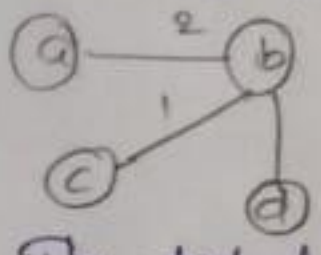


Prim's Algorithm:



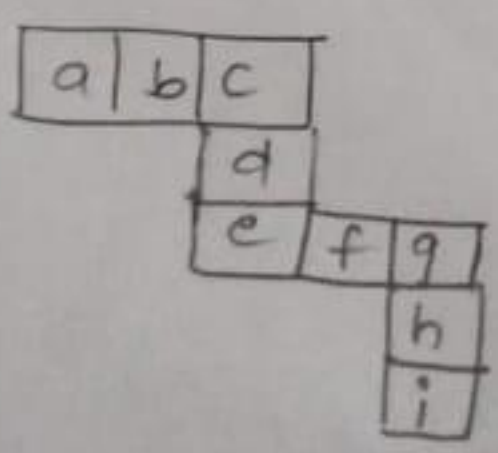
	a	Key	P_r
a	T	0	-
b	T	2	a
c	T	5, 1	a b
d	T	3,	a b

Source = A

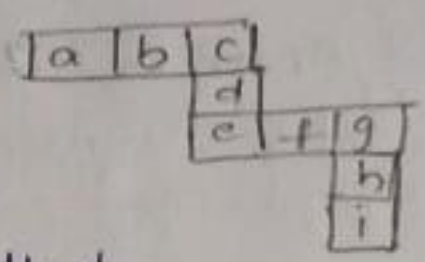


∴ The total cost of all Edges in the MST = 4 //

To compute the Sum of subsets for the following graph and them satisfy the given constraints.
Set S{} = (a, b, c, d, e, f, g, h, i) values used are V{i} = (1, 2, 3 .... 9)}

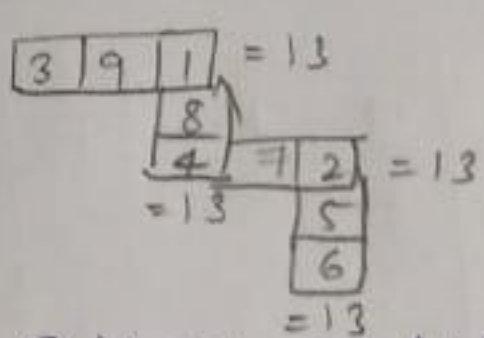


Used all values only one time
Constraints hold such as
$a+b+c = c+d+e = e+f+g = g+h+i$



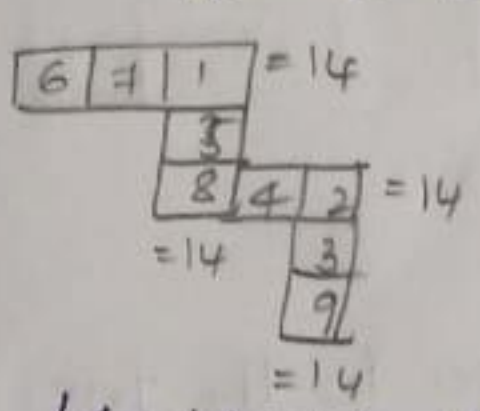
Given that
$a+b+c = c+d+e = e+f+g = g+h+i$
By using the values 1 to 9 and adding Equal to other three values of sum

1)



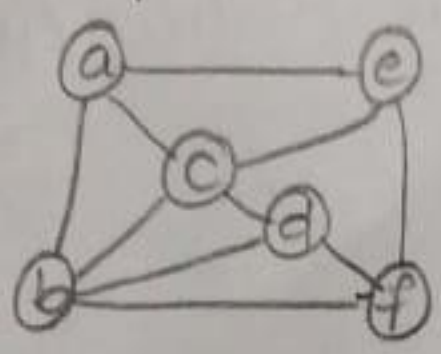
$a+b+c = c+d+e = e+f+g = g+h+i$
$13 = 13 = 13 = 13$

2)



$14 = 14 = 14 = 14$

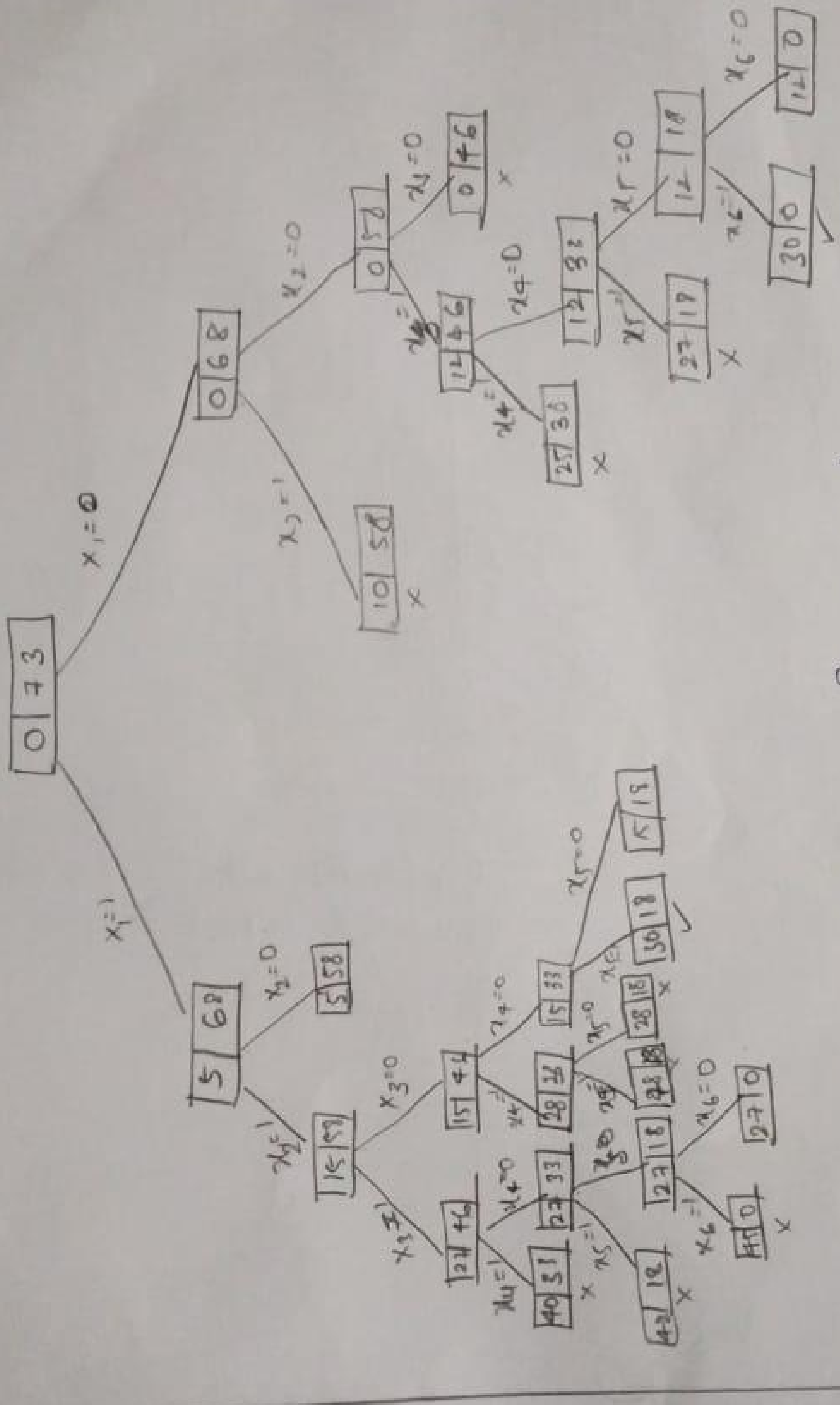
3) Calculate the chromatic no for the following Graph coloring.



(4) Consider a set $S = (5, 10, 12, 13, 15, 18)$ and $d = 30$. Solve it for obtaining a sum of subset.

Given that

$S = (\overset{x_1}{5}, \overset{x_2}{10}, \overset{x_3}{12}, \overset{x_4}{13}, \overset{x_5}{15}, \overset{x_6}{18})$; $d = 30$



∴ Sum of subsets are $= \{x_1, x_2, x_5\} = \{5, 10, 15\}$

$\{x_3, x_6\} = \{12, 18\}$

Colour