24/6/24

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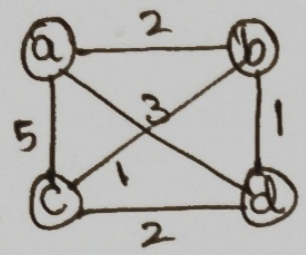
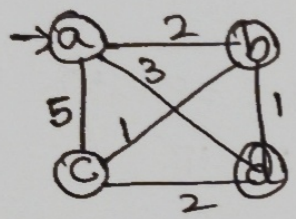
CSA0666

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

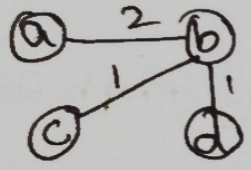


Sol: Prim's:



Source = A

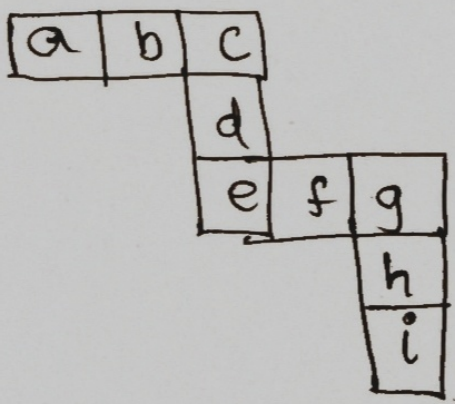
	Q	Key	PT
a	T	0	-
b	T	2	a
c	T	∛1	∅b
d	T	∛1	∅b



∴ Total cost of all edges in the MST = 4

2. To compute the sum of subsets for the following graphand the satisfy given constraints.

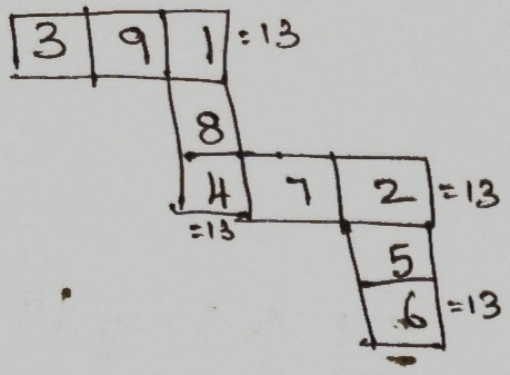
Set S{} = (a,b,c,d,e,f,g,h,i) values used are V{i} = {1,2,3,...9}



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

By using the values $v\{i\}$ and adding equation to other three values of sum,

1)

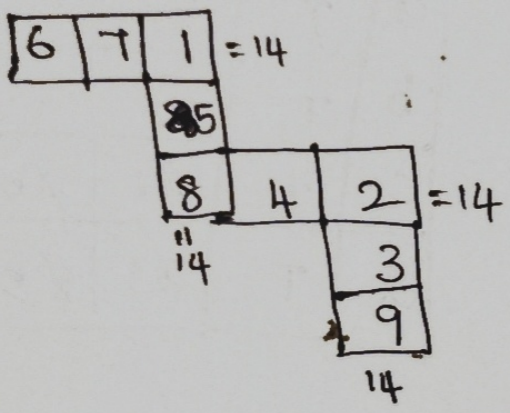


$a+b+c = c+d+e = e+f+g = g+h+i$

$3+9+1 = 1+8+4 = 4+7+2 = 2+5+6$

$13 = 13 = 13 = 13$

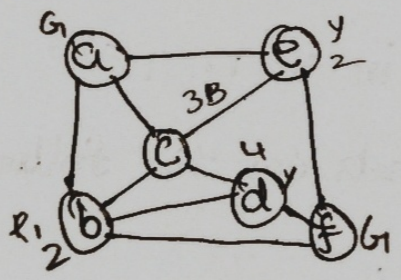
2)

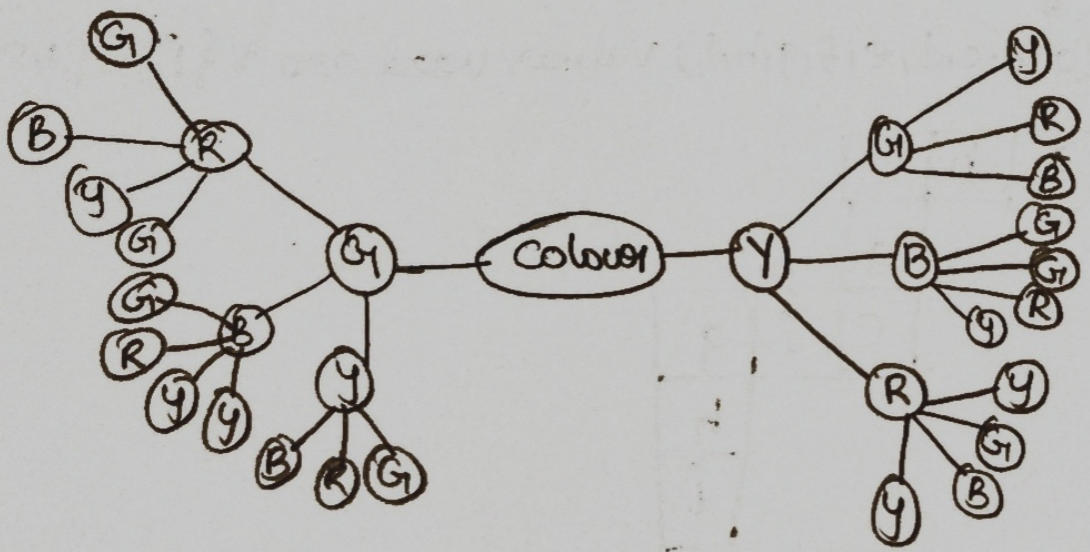


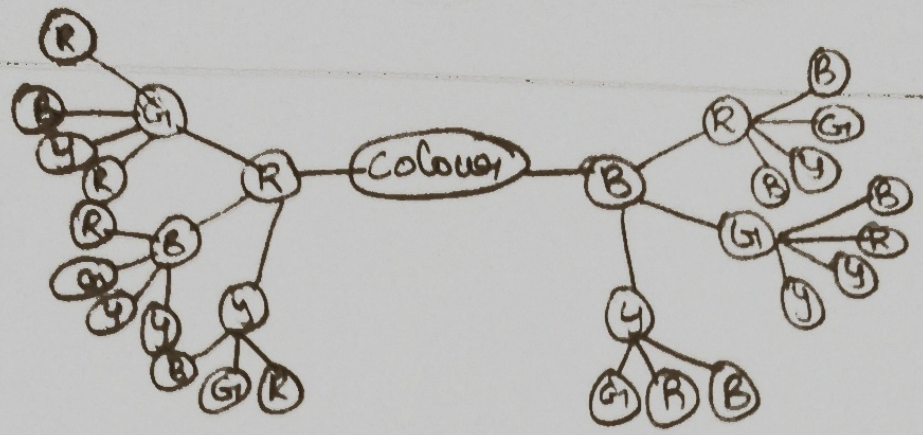
$6+7+1 = 1+5+8 = 8+4+2 = 3+3+9$

$14 = 14 = 14 = 14$

3. Calculate the chromatic no for the following Graph Coloring.



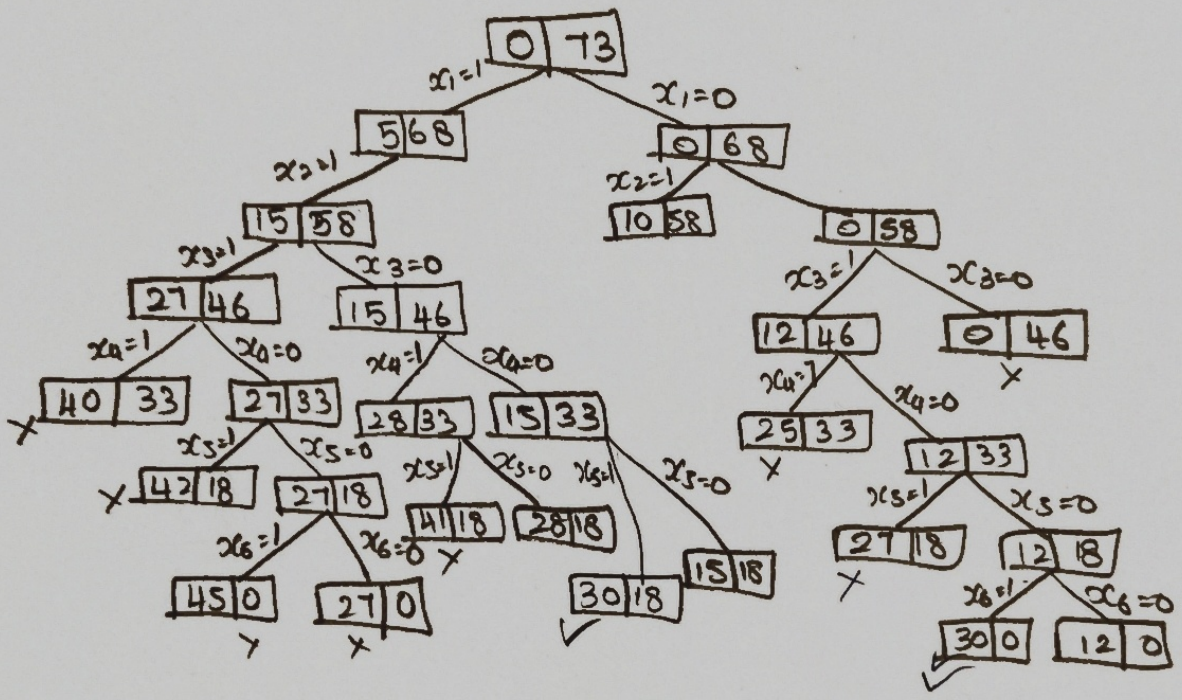




4. Consider a set $S = (5, 10, 12, 13, 15, 18)$ and $d = 30$. Solve it for obtaining a sum of subset.

Given.

$S = (5, 10, 12, 13, 15, 18)$; $d = 30$.



∴ Sum of subsets are $= \{x_1, x_2, x_3\} = \{5, 10, 15\}$

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