Y. Harika
192325023
CSA0669
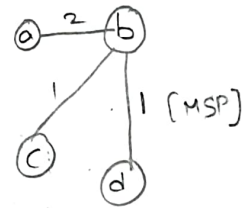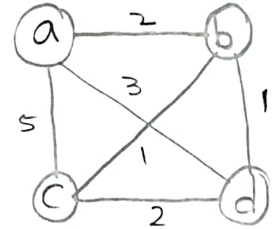
ANALYTICAL ASSIGNMENT-4
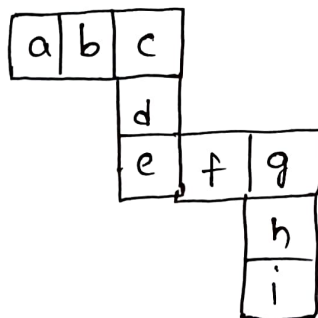
1) Apply prim's algorithm to solve the Minimum spanning tree for given graph. Also compute total cost of all edges.

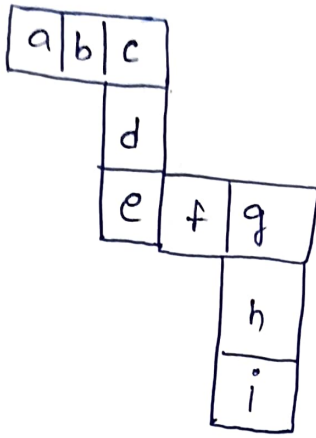| ⊘	key	Pv
A	T	0	—
B	T	2	a
C	T	5̶ 1	a̶ b
D	T	3̶ 1	a

∴ Total cost of all edges in MST = 4,,

2. To compute the sum of subsets for the following graph and then satisfy the given constraints. set $S\{\} = (a,b, c, d, e,f, g, h, i)$ values used are $v\{i\} = (1, 2, 3, \ldots 9)$
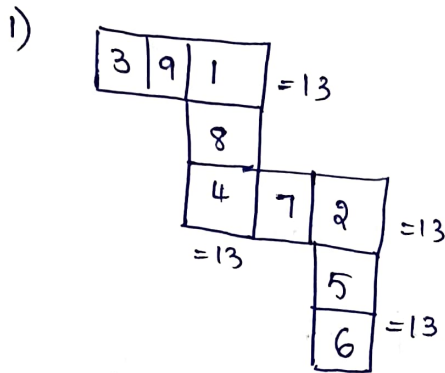

Used all values only one time constraints hold such as $a+b+c = c+d+e = e+f+g+g+h+i$

```
| a | b | c |
        | d |
        | e | f | g |
                | h |
                | i |
```

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

By using the values v{i} and adding equal to other three values of sum.

1)

```
| 3 | 9 | 1 |  = 13
        | 8 |
        | 4 | 7 | 2 |  = 13
       = 13
                | 5 |
                | 6 |  = 13
```

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

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

$13 = 13 = 13 = 13$.

2)

```
| 6 | 7 | 1 |  = 14
        | 85 |
        | 8 | 4 | 2 |  = 14
        14
                | 3 |
                | 9 |
                14.
```
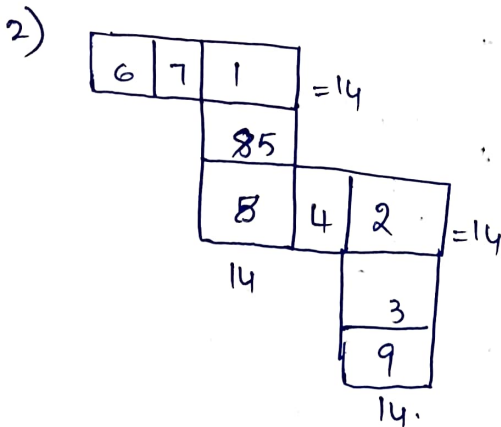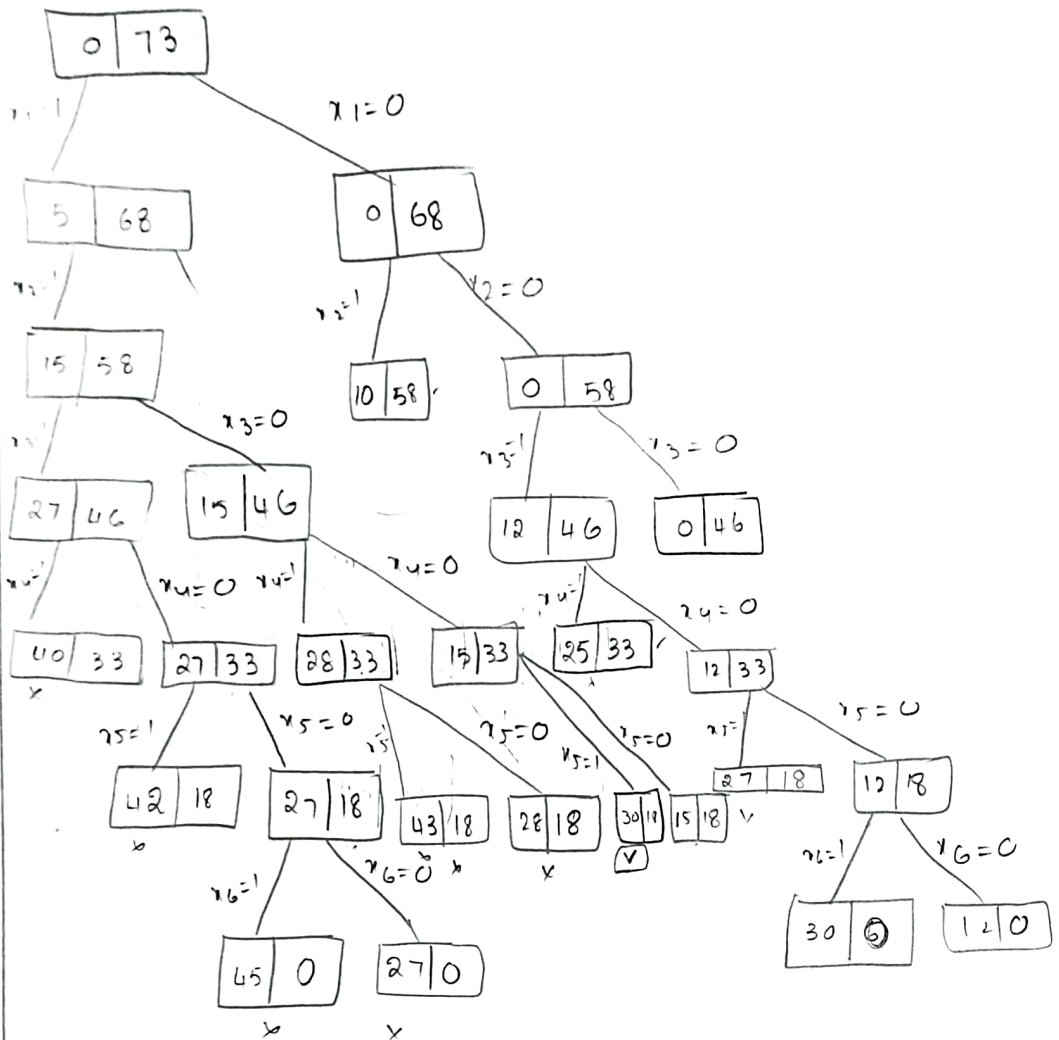
$6+7+1 = 1+5+8 = 8+4+2 = 2+3+9$

$14 = 14 = 14 = 14$.

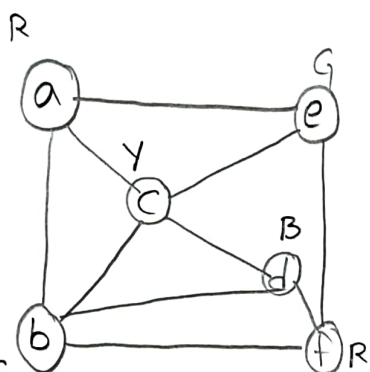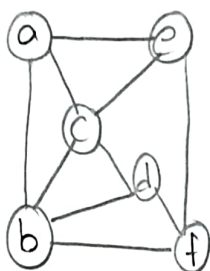Consider a set $S = (5, 10, 12, 13, 15, 18)$ and $d = 30$. Solve it for obtaining a sum of subset.

$S = (5, 10, 12, 13, 15, 18)$; $d = \{30\}$

$x_1 \; x_2 \; x_3 \; x_4 \; x_5 \; x_6$

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Subsets are = $\{x_1, x_2, x_5\} = \{5, 10, 15\}$

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

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

a - Red
e - Green
f - Red
b - Green
d - Blue
c - Yellow