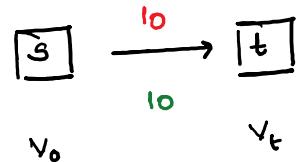
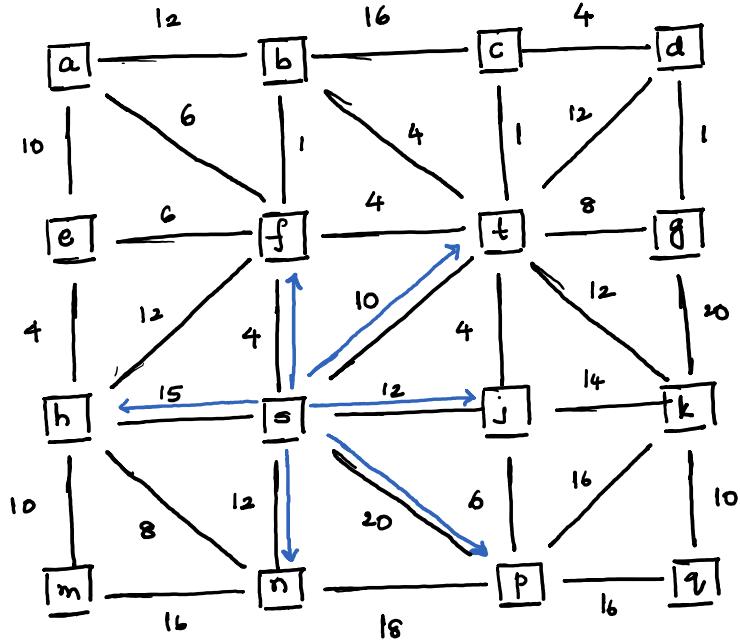
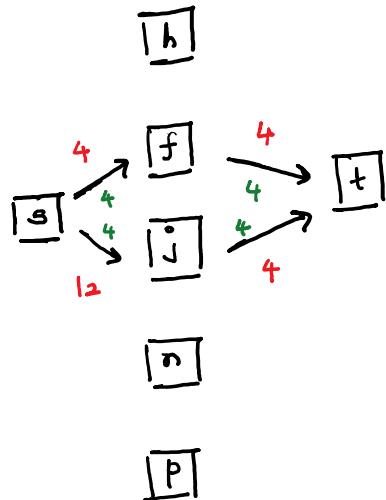
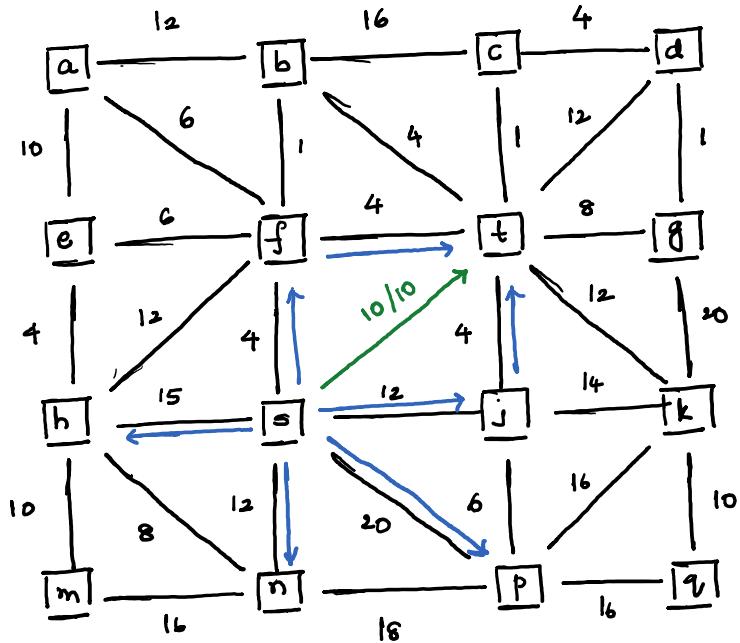


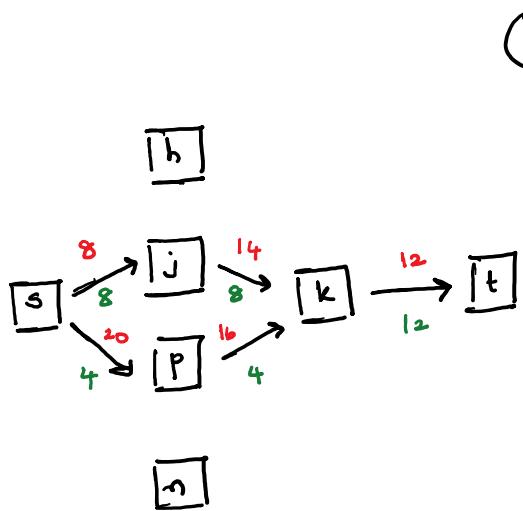
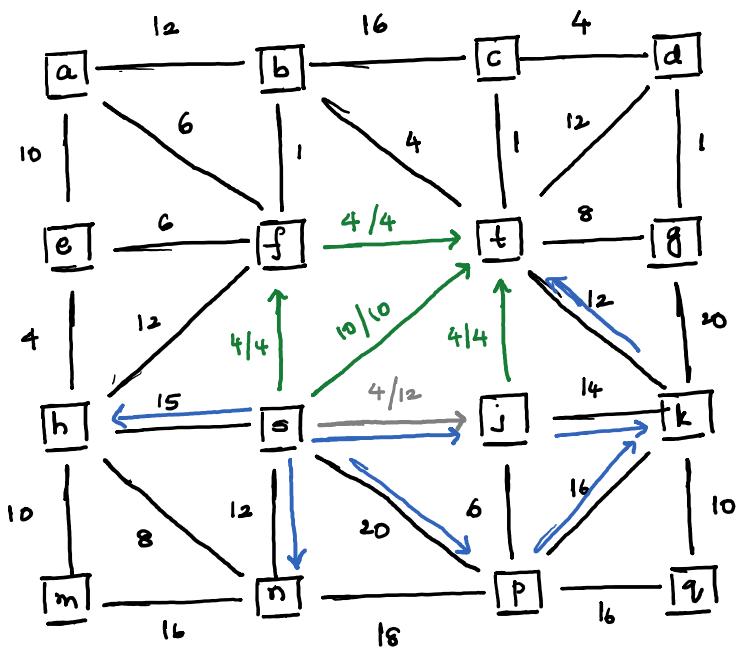
1-10 : DINIC's ALGORITHM :



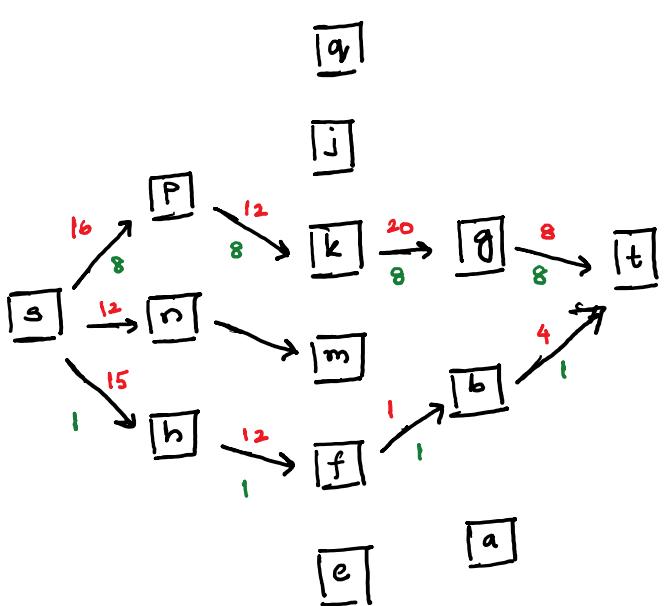
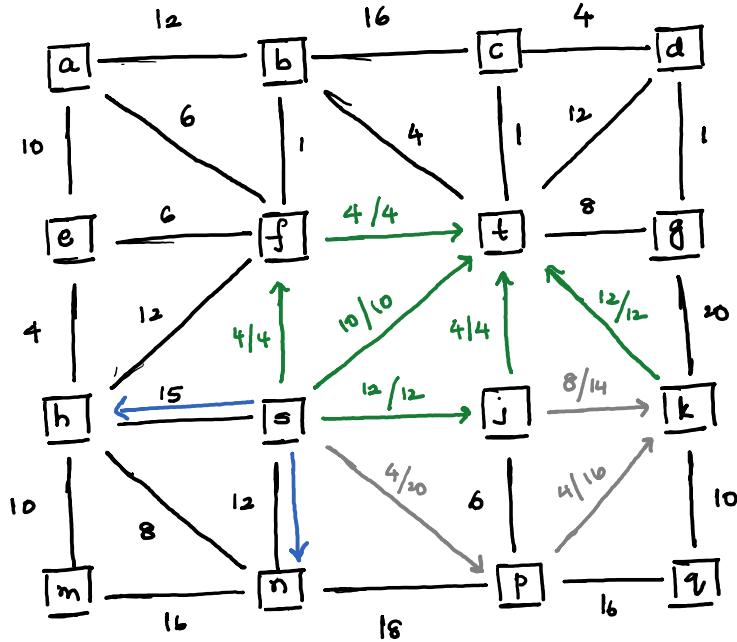
Flow augmented = $\boxed{10}$



Flow augmented = $4+4 = \boxed{8}$

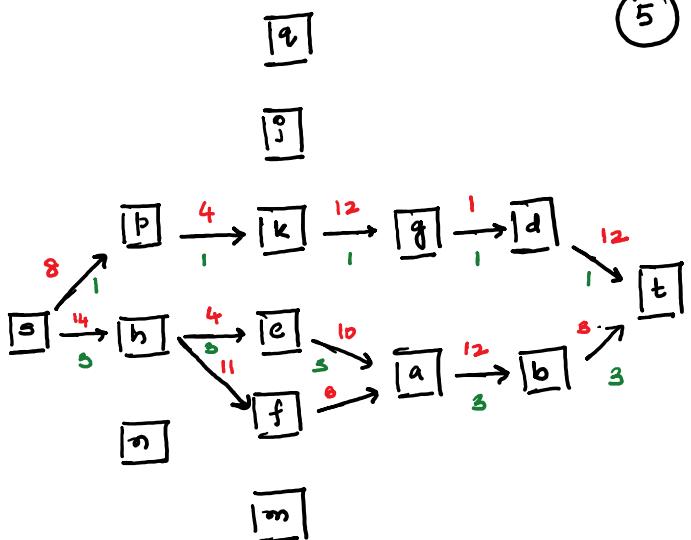
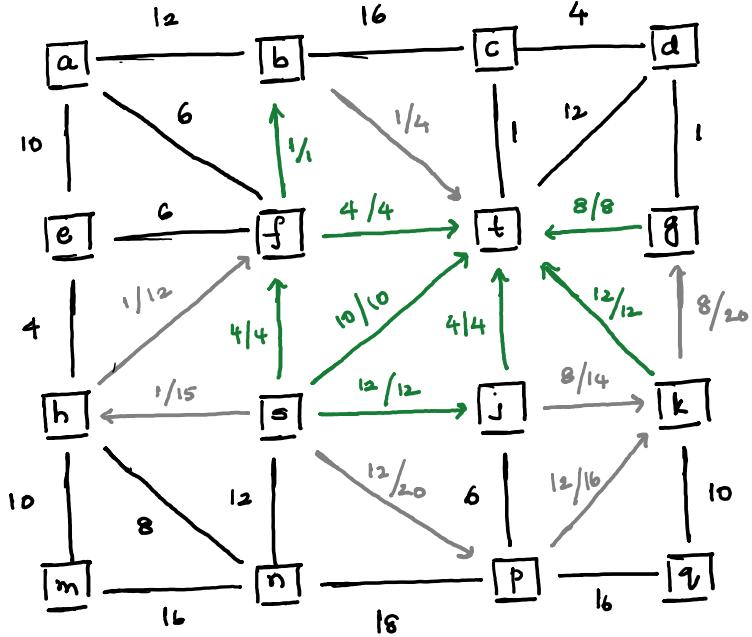


$$\text{Flow augmented} = 8 + 4 = \boxed{12}$$



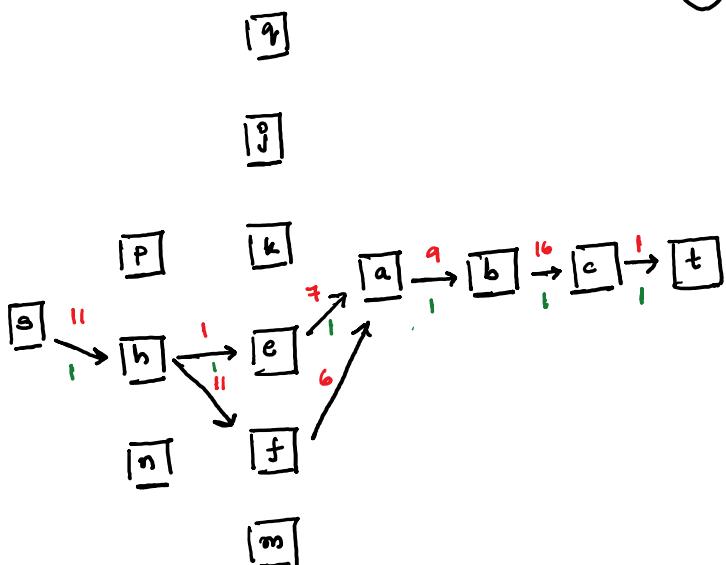
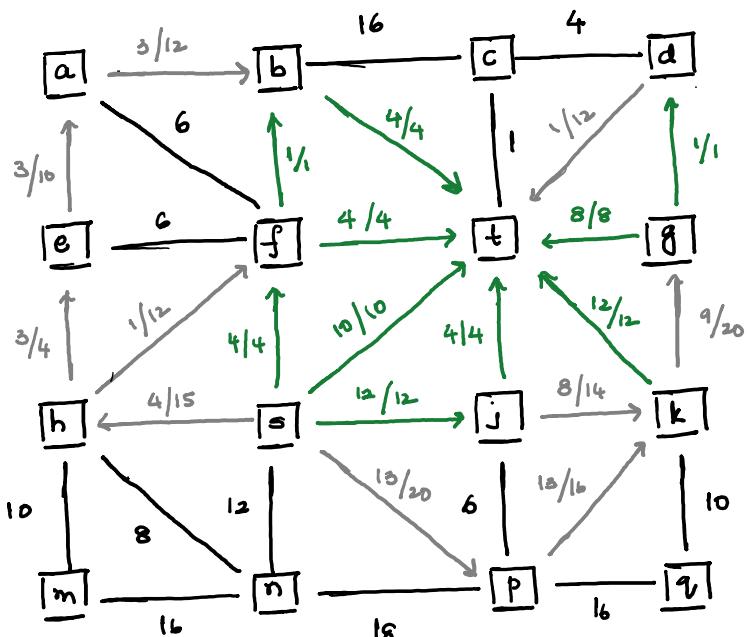
$$\text{Flow augmented} = 8 + 1 = \boxed{9}$$

5



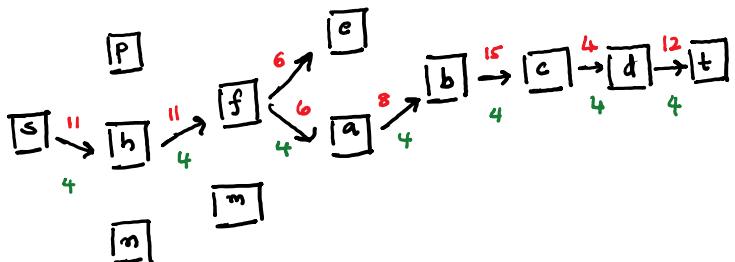
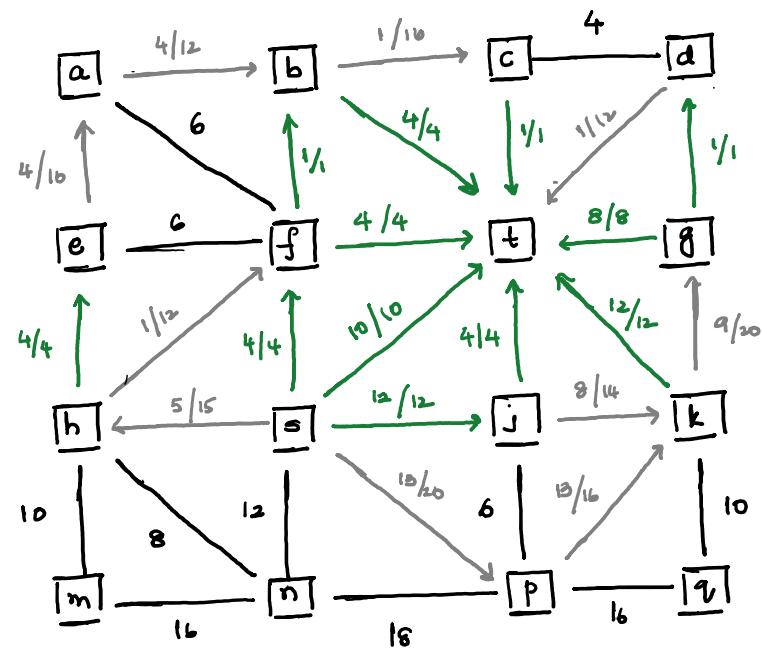
$$\text{Flow augmented} = 3 + 1 = \boxed{4}$$

6

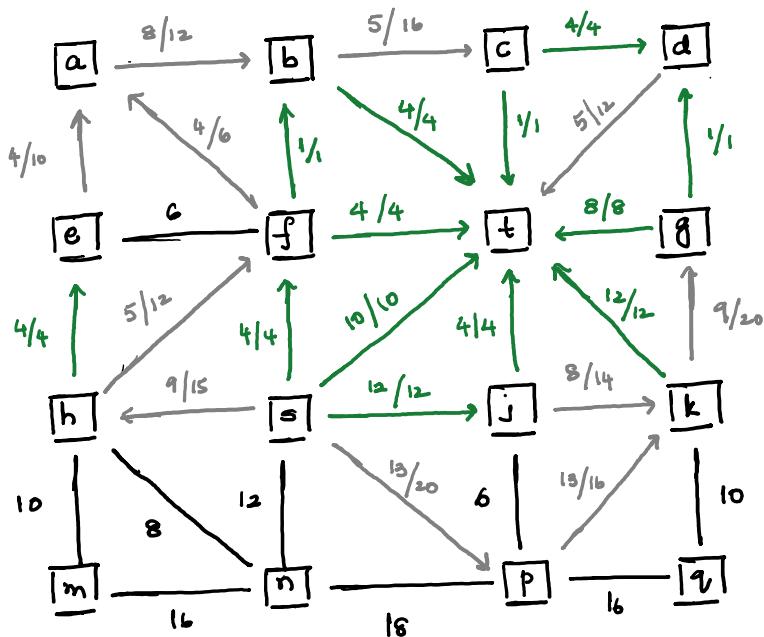


$$\text{Flow augmented} = \boxed{1}$$

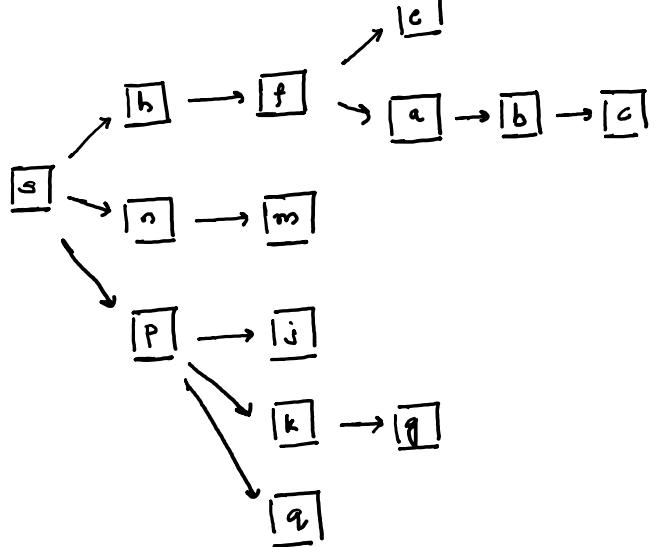
七



$$\text{Flow augmented} = \boxed{4}$$



For finding the min cut

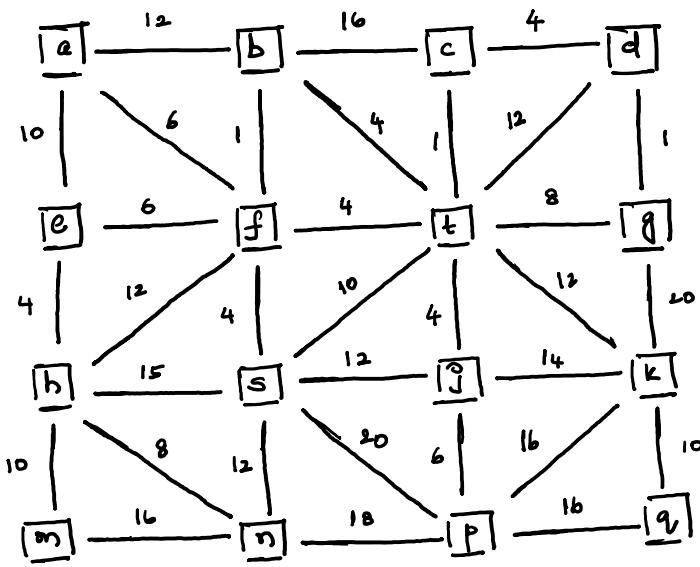


Then does not exist a path from s to t

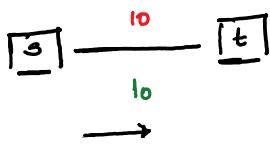
Reached max flow

Flow: 48, Cut: $(V - \{d, t\}, \{d, t\})$

1-dv : Using MKM method

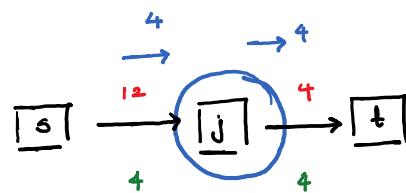
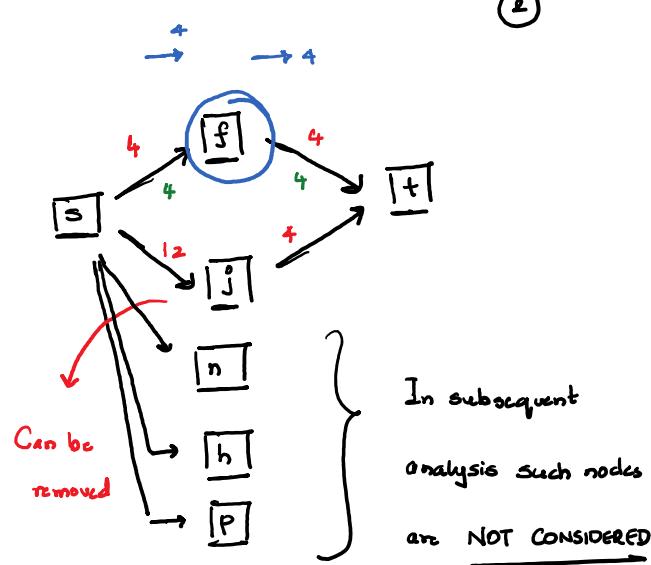
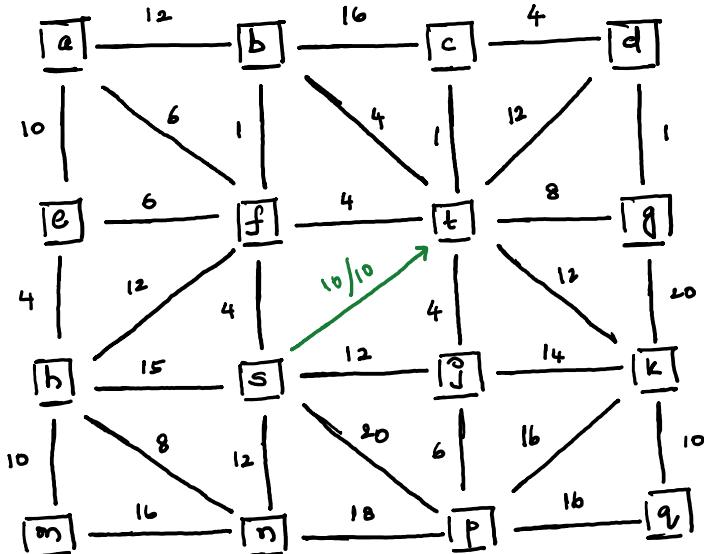


Depth in LN
①



② is saturated

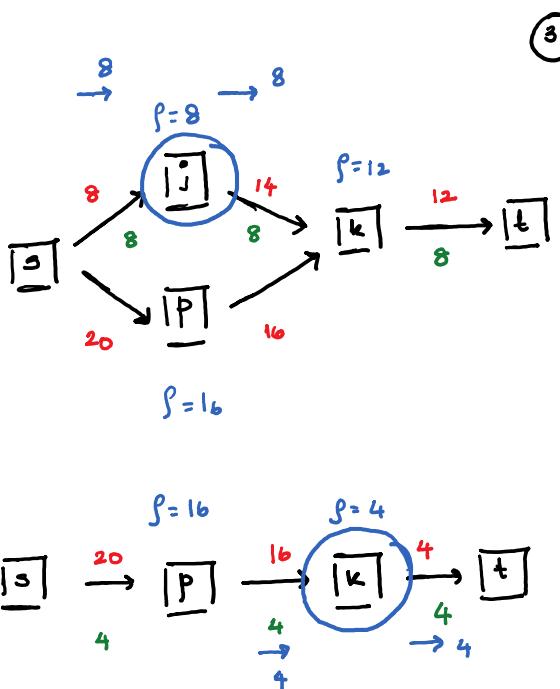
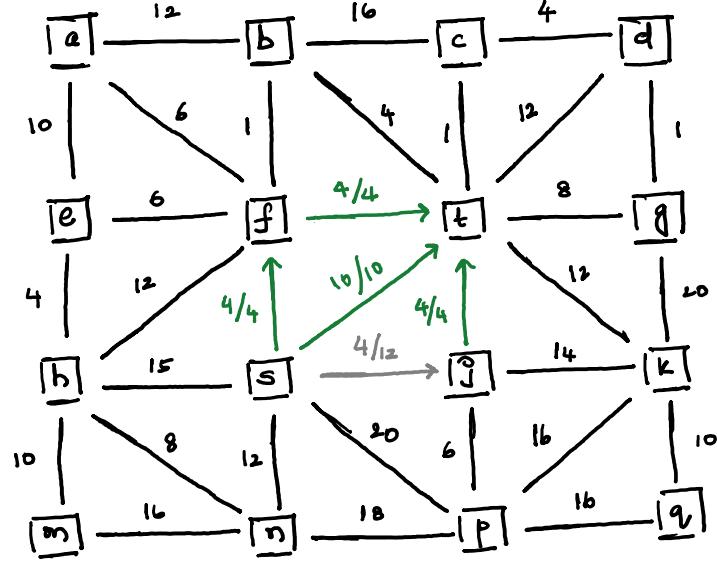
Flow augmented = $\boxed{10}$



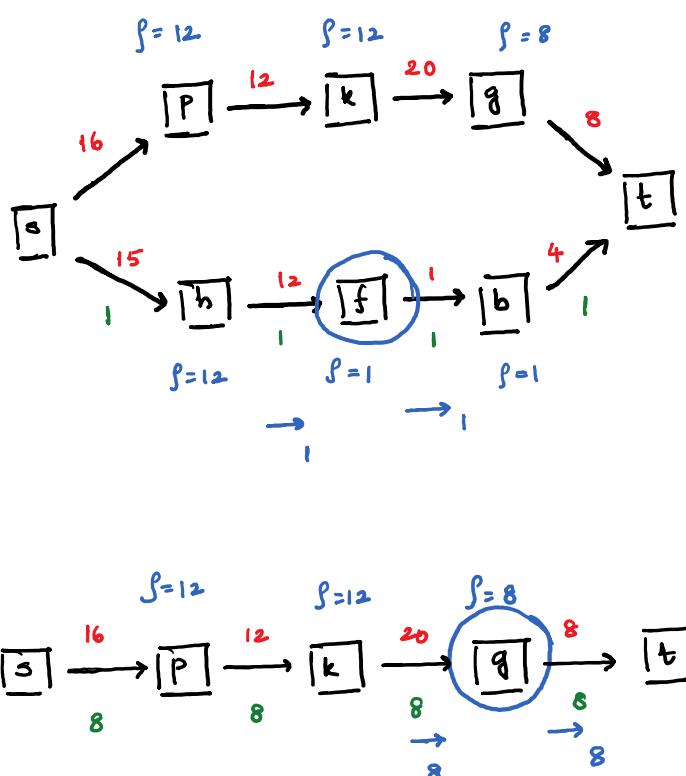
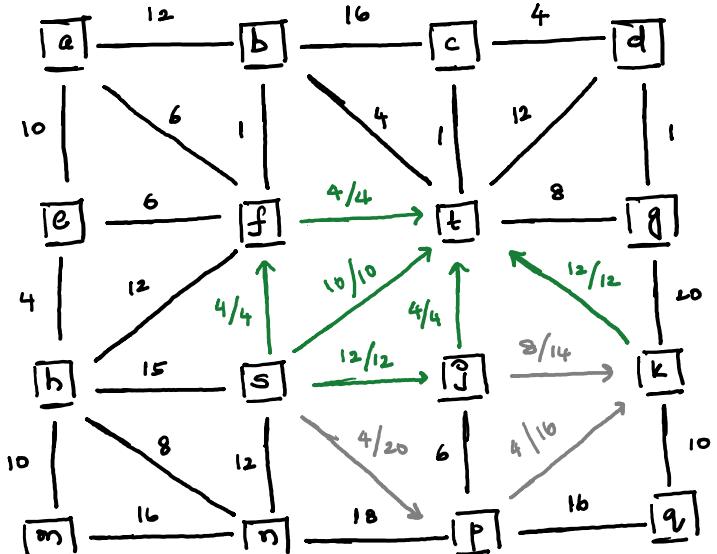
Here in MKM method we remove nodes with 0 potential and their edges

Flow augmented
 $= 4 + 4 = \boxed{8}$

Remove edges with 0 residual capacities

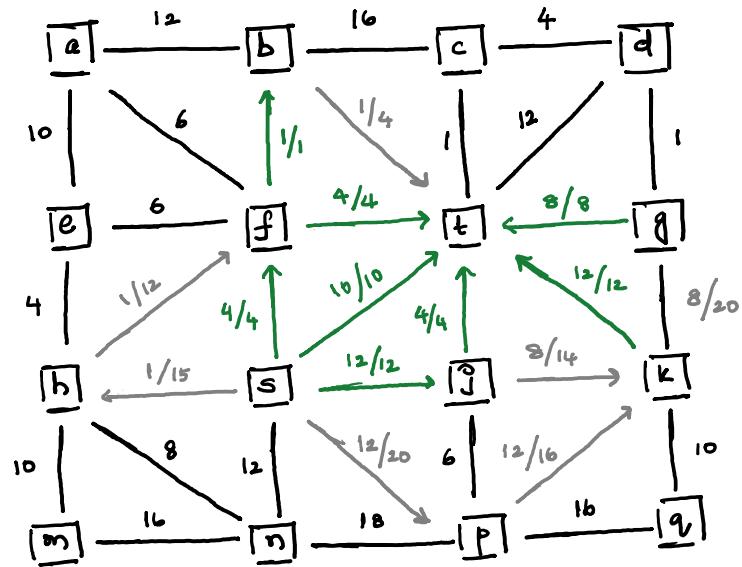


$$\text{Flow augmented : } 8 + 4 = \boxed{12}$$

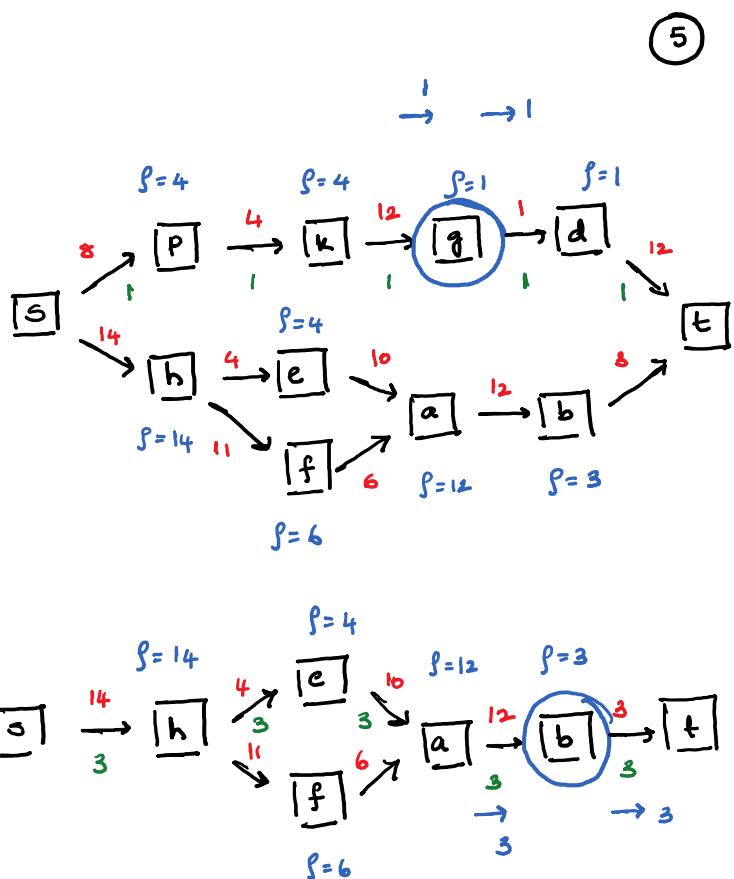


$$\text{Flow augmented : } 1 + 8 = \boxed{9}$$

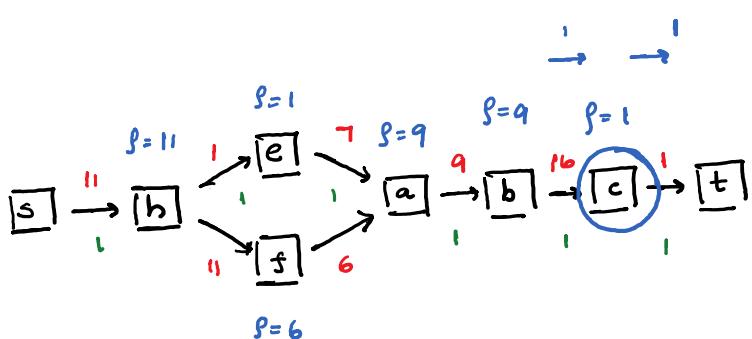
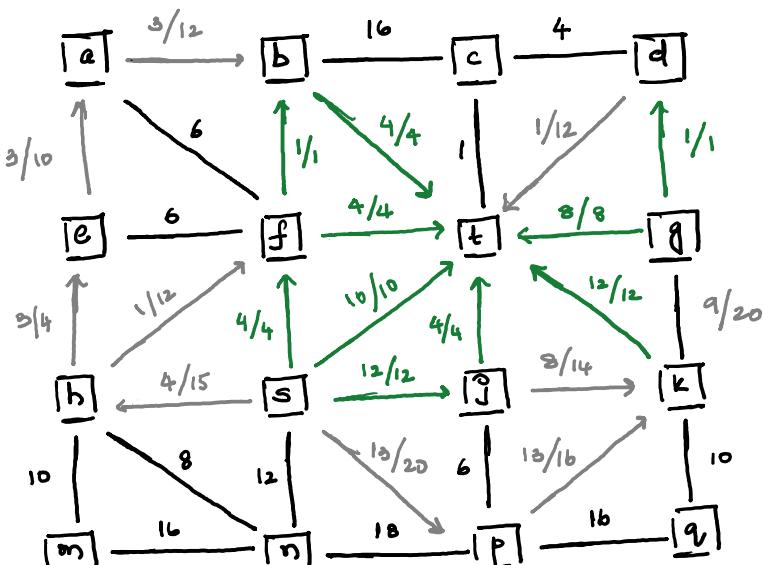
5



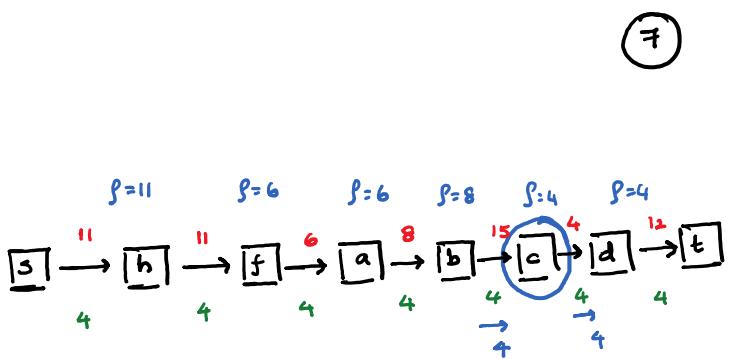
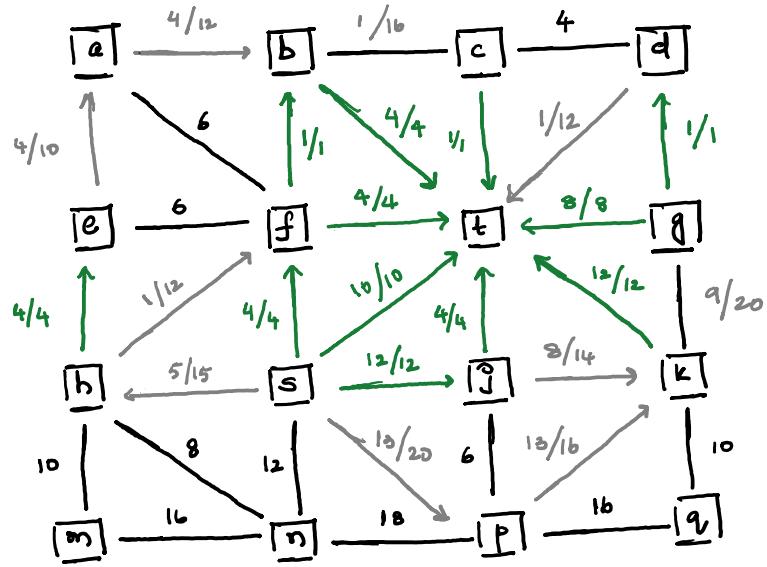
$$\text{Flow augmented: } 3+1 = \boxed{4}$$



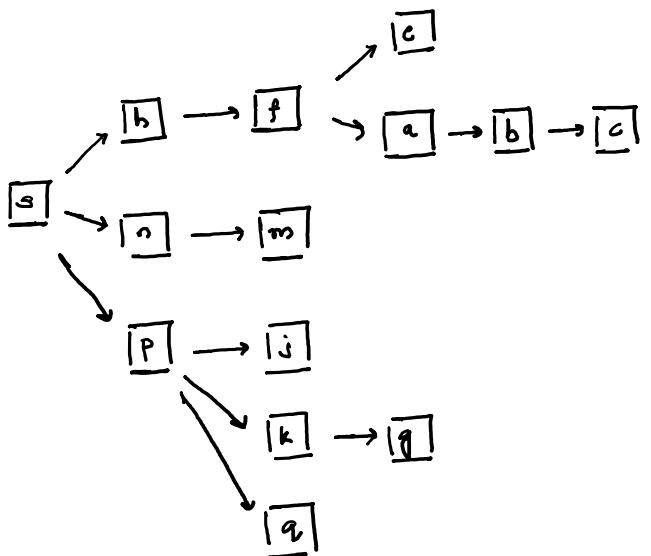
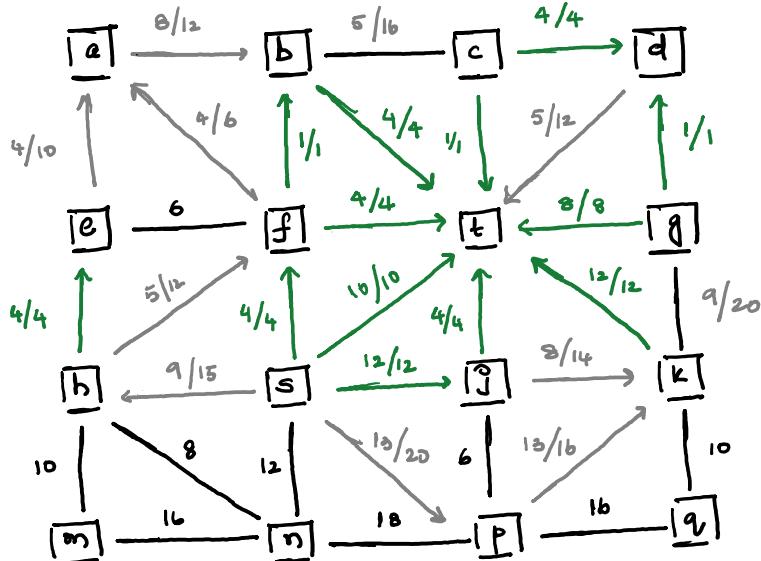
6



$$\text{Flow augmented: } \boxed{1}$$



Flow augmented : 14



Total flow: $4 + 1 + 4 + 9 + 12 + 10 + 8$

$$= \boxed{48}$$

Cart: $(V - \{d, t\}, \{d, t\})$
 (09)
 $(\{s, h, n, p, f, m, g, k, q, e, a, b, c, g\}, \{d, t\})$