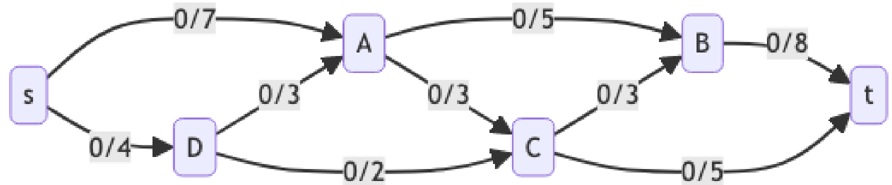
Q7

You are given the following flow network where every edge has a maximum flow capacity.



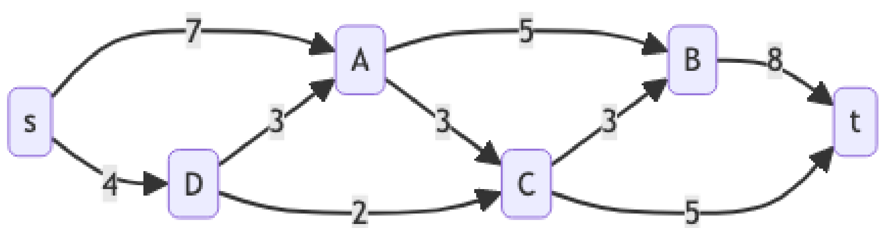

```
FORD-FULKERSON(G, s, t)
for each edge (u, v) ∈ G.E
    (u, v).f = 0
while there exists a path p from s to t in the residual network G_f
    c_f(p) = min {c_f(u, v) : (u, v) is in p}
    for each edge (u, v) in p
        if (u, v) ∈ E
            (u, v).f = (u, v).f + c_f(p)
        else (v, u).f = (v, u).f − c_f(p)
```

Figure 1: Figure

Tasks

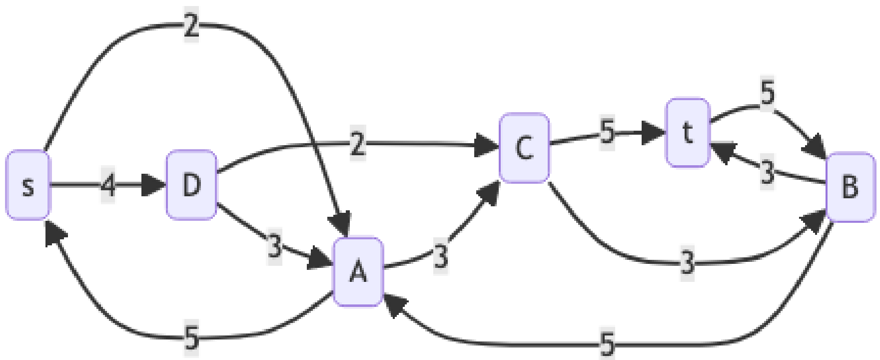
1. Draw the first and second residual networks when running the Ford-Fulkerson algorithm on the given network with source s and sink t.

First residual network



Second residual network

Depends on the chosen path but here is an example if we choose s,A,B,t we end up with a new residua network that looks like this:



2. What is the maximum flow in the network when the Source is s and Sink is t?

10

3. Which edges in the network are limiting the network capacity?

(A,B), (A,C), (D,C) 4. What is the minimum cut capacity?

10

5. What would the maximum flow be if we use Edmonds-Karp alogrithm?

10