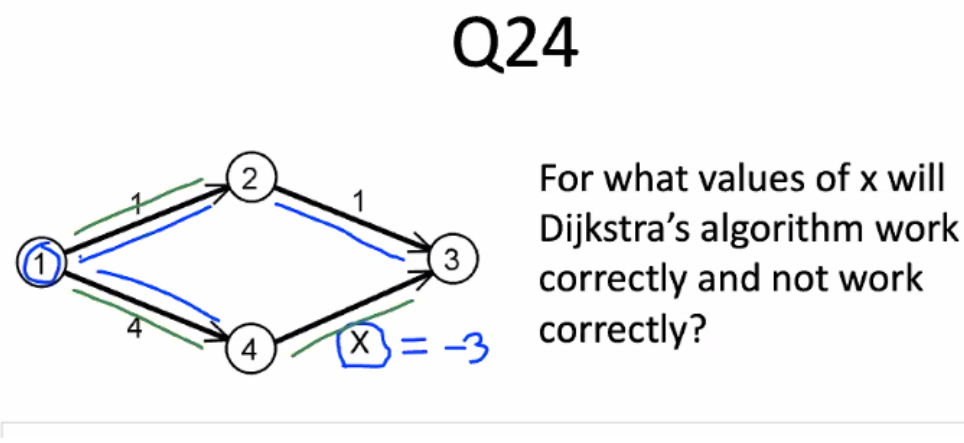
Q21 C

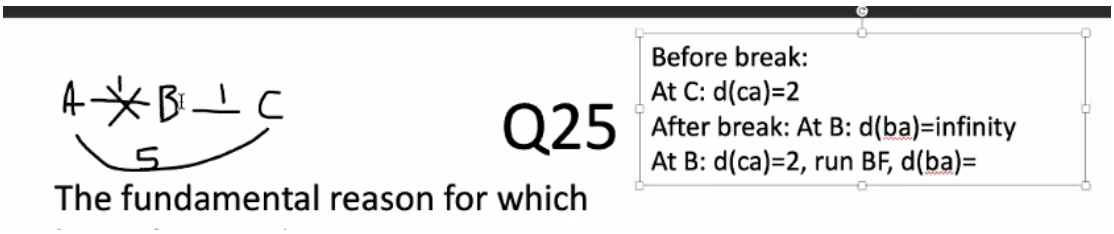
Q22 A
Since Dijkstra is greedy, the answer computed by Dijkstra may be incorrect.

Q23
Link State
Distance Vector
Distance Vector
Path-vector

Q24
Work correctly: x>=-2
Not work correctly:x<-2



Q25



Q25

Q: The fundamental reason for which loops form in the Distance Vector protocol is that a node A decides to use a neighbor B as the next hop for a destination based on routing information that was, at some point, propagated by A itself.

Give an example of this - draw a simple topology, break a link, and show a sequence of updates triggered by the distance vector protocol.

Before break:
At C: d(ca)=2
After break: At B: d(ba)=infinity
At B: d(ca)=2, run BF, d(ba)=2+1=3, inform c
At C: run BF, d(ca)=4, inform b
At B: run BF, d(ba)=5, inform c
At C: run BF, d(ca)=min(5+1,5}=5
At B: run BF, d(ba)=6
Everything stabilizes.

A—B—C

If B–C breaks, then B will notice, recompute its route to C using A, which will then update its route to C using B, and so on forever. This is the count-to-infinity problem in DV routing.

Poisoned reverse partially fixes this: B lies to A.

In Path vector, nodes also exchange path information. This fixes the routing loop problem once and for all.

Q26

a) 255.255.255.0
b) 2^8-2=254
c) 4 subnets
d)

198.42.180.0/24	198.42.180.255
198.42.181.0/24	198.42.181.255
198.42.182.0/24	198.42.182.255
198.42.183.0/24	198.42.183.255