### Problem 3

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *Step* | *N’* | *D(t),p(t)* | *D(u),p(u)* | *D(v),p(v)* | *D(w),p(w)* | *D(y),p(y)* | *D(z),p(z)* |
| 0 | x | ∞ | ∞ | 3,x | 6,x | 6,x | 8,x |
| 1 | xv | 7,v | 6,v | 3,x | 6,x | 6,x | 8,x |
| 2 | xvu | 7,v | 6,v | 3,x | 6,x | 6,x | 8,x |
| 3 | xvuw | 7,v | 6,v | 3,x | 6,x | 6,x | 8,x |
| 4 | xvuwy | 7,v | 6,v | 3,x | 6,x | 6,x | 8,x |
| 5 | xvuwyt | 7,v | 6,v | 3,x | 6,x | 6,x | 8,x |
| 6 | xvuwytz | 7,v | 6,v | 3,x | 6,x | 6,x | 8,x |

### Problem 5

Cost to

u v x y z

v ∞ ∞ ∞ ∞ ∞

From x ∞ ∞ ∞ ∞ ∞

z ∞ 6 2 ∞ 0

Cost to

u v x y z

v 1 0 3 ∞ 6

From x ∞ 3 0 3 2

z 7 5 2 5 0

Cost to

u v x y z

v 1 0 3 3 5

From x 4 3 0 3 2

z 6 5 2 5 0

Cost to

u v x y z

v 1 0 3 3 5

From x 4 3 0 3 2

z 6 5 2 5 0

(Attention! Although the last table is the same as the last but two table, we should draw it.)

### Problem 9

(1) NO, this is because that decreasing link cost won’t cause a loop. And Good news travels fast.

(2) No. Connecting two nodes with a link is equivalent to decreasing the link weight from infinite to the finite weight.