Homework7

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**1.(a)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | Inf | Inf | **2, x** | inf | 6, x | 3, x |
| 1 | xv | Inf | Inf |  | 6, v | 6, x | **3, x** |
| 2 | xvz | Inf | Inf |  | **4, z** | 5, z |  |
| 3 | xvzw | 9, w | 16, w |  |  | **5, z** |  |
| 4 | xvzwy | **7, y** | 16, t |  |  |  |  |
| 5 | xvzwyt |  | **13, t** |  |  |  |  |
| 6 | xvzwytu |  |  |  |  |  |  |

**1.(b)**



**1.(c)**

|  |  |
| --- | --- |
| Destination | Outgoing link |
| v | (x,v) |
| z | (x,z) |
| y | (x,z) |
| w | (x,z) |
| t | (x,z) |
| u | (x,z) |

**2.(a)**

*The numbers in red show that all nodes receive and process that update at time T = 1.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Node W | W | X | Y | Z |
| W | 0 | 6 | **3** | 1 |
| X | **6** | **0** | **2** | **Inf** |
| Z | **1** | **inf** | **2** | **0** |
| Node X | W | X | Y | Z |
| W | **0** | **6** | **Inf** | **1** |
| X | 6 | 0 | 2 | **4** |
| Y | **Inf** | **2** | **0** | **2** |
| Node Y | W | X | Y | Z |
| X | **6** | **0** | **2** | **inf** |
| Y | **3** | 2 | 0 | 2 |
| Z | **1** | **inf** | **2** | **0** |
| Node Z | W | X | Y | Z |
| W | **0** | **6** | **Inf** | **1** |
| Y | **1nf** | **2** | **0** | **2** |
| Z | 1 | **4** | 2 | 0 |

**2.(b)**

No. This table is not stable.

For example, node Z will send its new table to its neighbor’s node W and node Y at T=1.

**3.(a)**

NO. ISP only wants to route traffic to its customer networks.

When ISP B wants to send data to ISP A through ISP X, it will occupy the resources of ISP X without generating any benefits for ISP X.

**3.(b)**

Yes, because Y pays A, so ISP has the responsibility to route traffic to its customer networks, which means the customer needs to be reachable from every other customer.