Q1:



|  |  |
| --- | --- |
| Prefix match | Link interface |
| 0000 | 0 |
| 00110000 01000 | 1 |
| 01000011 01 | 2 |
| Otherwise | 3 |



|  |  |
| --- | --- |
| Destination addresses | Link interface |
| 00110000 01001001 01010001 01010101 | 3 |
| 00110000 01000100 11000011 00111100 | 1 |

Q2:



Q3:



|  |  |  |
| --- | --- | --- |
| Subnet A | 214.9.25.64/26 | 64 addresses |
| Subnet B | 214.9.25.0/28 | 16 addresses |
| Subnet C | 214.9.25.32/27 | 32 addresses |
| Subnet D | 214.9.25.16/28 | 16 addresses |



Router 1:

|  |  |
| --- | --- |
| Longest prefix match | Outgoing interface |
| 11010110 00001001 00011001 01 | Subnet A |
| 11010110 00001001 00011001 0000 | Subnet B |
| 11010110 00001001 00011001 0001 | Subnet D |

Router 2:

|  |  |
| --- | --- |
| Longest prefix match | Outgoing interface |
| 11010110 00001001 00011001 0000 | Subnet B |
| 11010110 00001001 00011001 001 | Subnet C |
| 11010110 00001001 00011001 0001 | Subnet D |