Homework #10

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Points: 20

For due date, please see Canvas.

Suppose P, Q, and R are network service providers with respective CIDR address allocations C1.0.0.0/8, C2.0.0.0/8, and C3.0.0.0/8.

Each provider’s customers initially receive address allocations that are a subset of the provider’s.

P has the following customers:

* PA, with allocation C1.A3.0.0/16
* PB, with allocation C1.A4.0.0/20

Q has the following customers:

* QA, with allocation C2.0A.10.0/20
* QB, with allocation C2.0B.10.0/20

R has the following customer:

* RA, with allocation C3.0C.0.0/16

Assume there are no other providers or customers.

1. Give routing tables for P, Q, and R assuming each provider connects to each other.

P:

|  |  |
| --- | --- |
| Destination | Next Hop |
| C2.0.0.0/8 | Q |
| C3.0.0.0/8 | R |
| C1.A3.0.0/16 | PA |
| C1.A4.0.0/20 | PB |

Q:

|  |  |
| --- | --- |
| Destination | Next Hop |
| C1.0.0.0/8 | P |
| C2.0A.10.0/20 | QA |
| C2.0B.10.0/20 | QB |
| C3.0.0.0/8 | R |

R:

|  |  |
| --- | --- |
| Destination | Next Hop |
| C1.0.0.0/8 | P |
| C2.0.0.0/8 | Q |
| C3.0C.0.0/16 | RA |

1. Now assume P is connected to Q and Q is connected to R, but P and R are not directly connected. Give routing tables for P, Q, and R.

P:

|  |  |
| --- | --- |
| Destination | Next Hop |
| C2.0.0.0/8 | Q |
| C3.0.0.0/8 | Q |
| C1.A3.0.0/16 | PA |
| C1.A4.0.0/20 | PB |

Q:

|  |  |
| --- | --- |
| Destination | Next Hop |
| C1.0.0.0/8 | P |
| C2.0A.10.0/20 | QA |
| C2.0B.10.0/20 | QB |
| C3.0.0.0/8 | R |

R:

|  |  |
| --- | --- |
| Destination | Next Hop |
| C1.0.0.0/8 | Q |
| C2.0.0.0/8 | Q |
| C3.0C.0.0/16 | RA |