Q1

| N | A | B | C | D | F | G | H |
|---|---|---|---|---|---|---|---|
| E | ∞, - | ∞, - | 3, E | 2, E | 2, E | ∞, - | ∞, - |
| E, D | ∞, - | 11, D | 3, E | | 2, E | 3, D | ∞, - |
| E, D, F | ∞, - | 11, D | 3, E | | | 3, D | ∞, - |
| E, D, F, C | 7, C | 5, C | | | | 3, D | ∞, - |
| E, D, F, C, G | 7, C | 5, C | | | | | 16, G |
| E, D, F, C, G, B | 6, B | | | | | | 7, B |
| E, D, F, C, G, B, A | | | | | | | 7, B |
| E, D, F, C, G, B, A, H | | | | | | | |

The shortest path from Node E to

A: ECBA - 6

B: ECB - 5

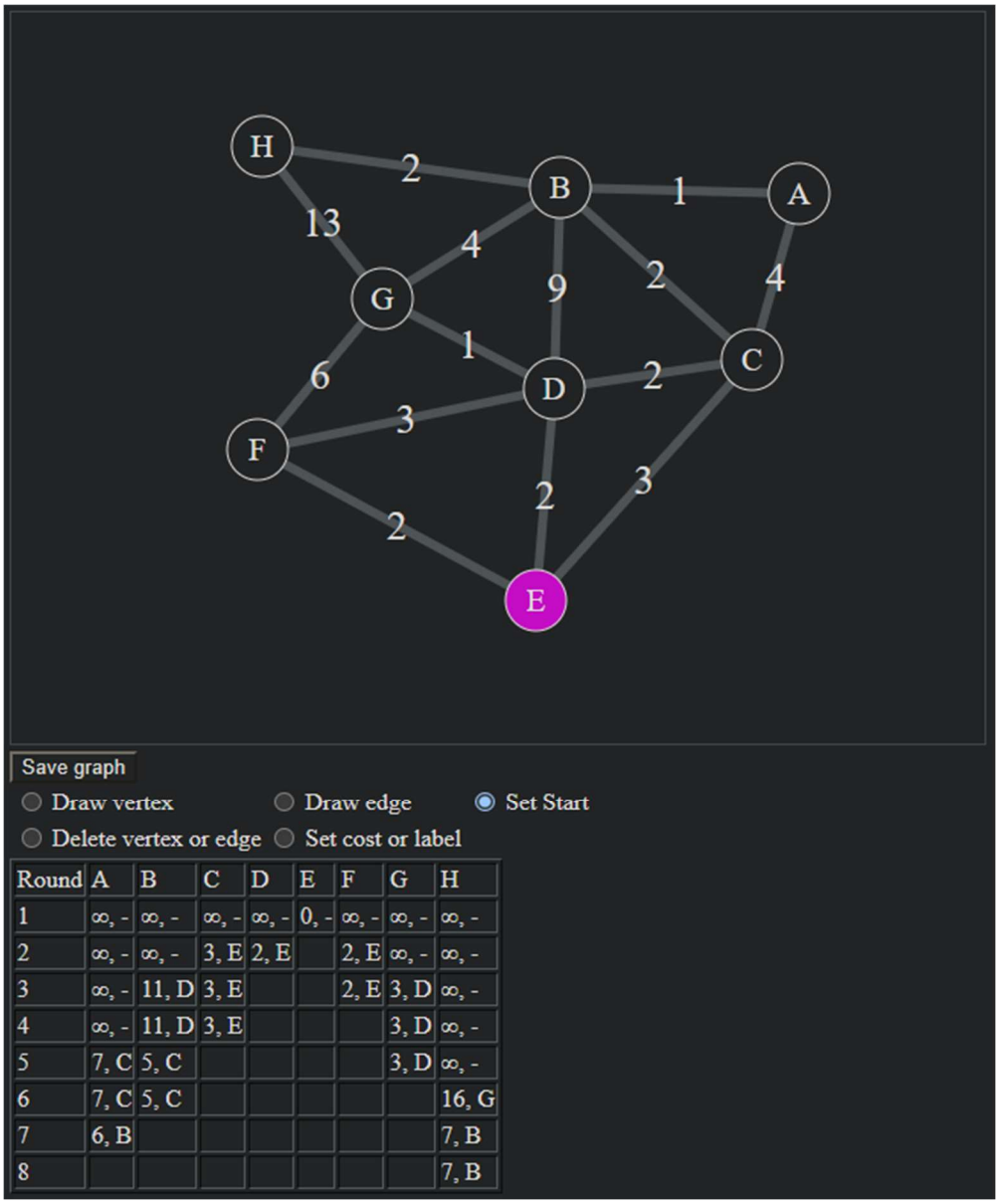
C: EC - 3

D: ED - 2

F: EF - 2

G: EDG - 3

H: ECBH - 7




| Round | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | ∞, - | ∞, - | ∞, - | ∞, - | 0, - | ∞, - | ∞, - | ∞, - |
| 2 | ∞, - | ∞, - | 3, E | 2, E | | 2, E | ∞, - | ∞, - |
| 3 | ∞, - | 11, D | 3, E | | | 2, E | 3, D | ∞, - |
| 4 | ∞, - | 11, D | 3, E | | | | 3, D | ∞, - |
| 5 | 7, C | 5, C | | | | | 3, D | ∞, - |
| 6 | 7, C | 5, C | | | | | | 16, G |
| 7 | 6, B | | | | | | | 7, B |
| 8 | | | | | | | | 7, B |

Q2:

| Destination | Distance | Route |
|---|---|---|
| Net 6 | 10 | Gate J |
| Net 24 | 5 | Gate J |
| Net 43 | 5 | Gate J |

For destination Net 6, it updates that a new route is setup via gateway J.

For destination Net 24, it updates that a shorter distance resulting from routing via gateway J.

For destination Net 43, it updates that if passing via gateway J, it will take a longer route.

| | | table | | K | table | J | | | |
|---|---|---|---|---|---|---|---|---|---|
| dist % | | dest | distance | route | dest | distance | new dist | | new route |
| 3 | | 1 | 0 | D | 1 | 2 | 5 | old | |
| | | 2 | 0 | D | | | | old | |
| | | 4 | 8 | L | 4 | 8 | 11 | old | |
| | | | | | 6 | 7 | 10 | new | J |
| | | 16 | 9 | M | 16 | 7 | 10 | old | |
| | | 24 | 8 | J | 24 | 2 | 5 | new | J |
| | | 40 | 5 | Q | 40 | 8 | 11 | old | |
| | | 43 | 4 | J | 43 | 2 | 5 | new | J |

Q3

i. 7

ii. 7

iii. ∞

iv. ∞

v. ∞

vi. 5

vii. ∞

viii. ∞

ix. A-B-D-C

x. ∞

xi. 11

xii. D-A-B-D-C

xiii. 14

Q4

1. y updates its vector:

   Dist. vector y: (6, 0, 17)

2. x updates its vector:

   Dist. vector x: (0, 6, 23)

3. y updates its vector:

   Dist. vector y: (6, 0, 29)

4. x updates its vector:

   Dist. vector x: (0, 6, 35)

5. y updates its vector:

   Dist. vector y: (6, 0, 41)

6. x updates its vector:

   Dist. vector x: (0, 6, 37)

7. y updates its vector:

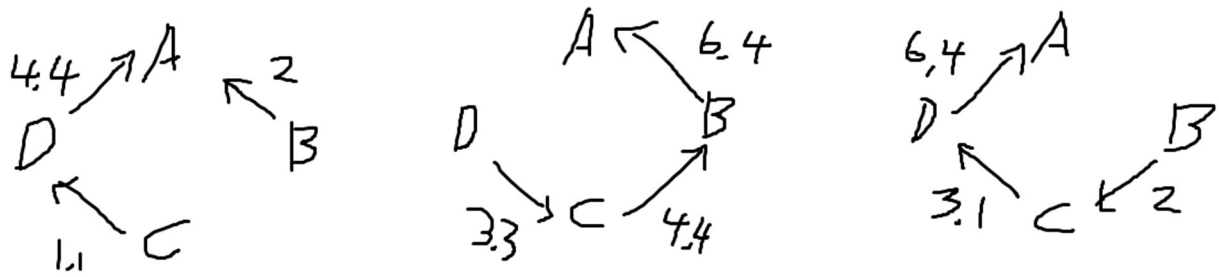
   Dist. vector y: (6, 0, 43)

8. x updates its vector:

   Dist. vector x: (0, 6, 37)

| | | | | | | |
|---|---|---|---|---|---|---|
| new xy | 6 | x | 0 | 6 | 11 | |
| new xz | 37 | y | 6 | 0 | 5 | |
| new yz | 44 | z | 11 | 5 | 0 | |
| | | y | 6 | 0 | 17 | |
| | | x | 0 | 6 | 23 | |
| | | y | 6 | 0 | 29 | |
| | | x | 0 | 6 | 35 | |
| | | y | 6 | 0 | 41 | |
| | | x | 0 | 6 | 37 | |
| | | y | 6 | 0 | 43 | |
| done | | x | 0 | 6 | 37 | done |

Q5




| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | input: edge value | | | | | | | | | |
| 1 | AD | | AB | | B | CL | 3.3 | min | 3.1 | ACL |
| | DA | 3.3 | BA | 3.1 | | ACL | 3.1 | | | |
| | | | | | C | CL | 3.3 | min | 3.3 | CL |
| | CD | | BC | | | ACL | 4.2 | | | |
| | DC | | CB | 1.1 | D | CL | 3.3 | min | 3.3 | CL |
| | | | | | | ACL | 4.2 | | | |
| | input: edge value | | | | | | | | | |
| 2 | AD | | AB | | B | CL | 5.5 | min | 2 | ACL |
| | DA | 4.4 | BA | 2 | | ACL | 2 | | | |
| | | | | | C | CL | 5.5 | min | 2 | ACL |
| | CD | 1.1 | BC | | | ACL | 2 | | | |
| | DC | | CB | | D | CL | 4.4 | min | 2 | ACL |
| | | | | | | ACL | 2 | | | |
| | input: edge value | | | | | | | | | |
| 3 | AD | | AB | | B | CL | 0 | min | 0 | CL |
| | DA | | BA | 6.4 | | ACL | 6.4 | | | |
| | | | | | C | CL | 0 | min | 0 | CL |
| | CD | | BC | | | ACL | 10.8 | | | |
| | DC | 3.3 | CB | 4.4 | D | CL | 0 | min | 0 | CL |
| | | | | | | ACL | 14.1 | | | |

Q6.

i. False, B gets “revenue” for routing ABX since X is B’s customer.

ii. True, W gets no “revenue” for routing AC since none of them are W’s customer.

iii. True, A gets no “revenue” for routing CABX since none of them are A’s customer.

iv. False, A gets “revenue” for routing WABX since W is A’s customer.