7. NETWORK FLOW I

▸ *Ford-Fulkerson demo*

Ford-Fulkerson algorithm demo

network G

flow   capacity

0 / 4

0 / 10   0 / 2   0 / 8   0 / 6   0 / 10

value of flow

s   0 / 10   0 / 9   0 / 10   t   0

residual graph G_f

4

10   2   8   6   10
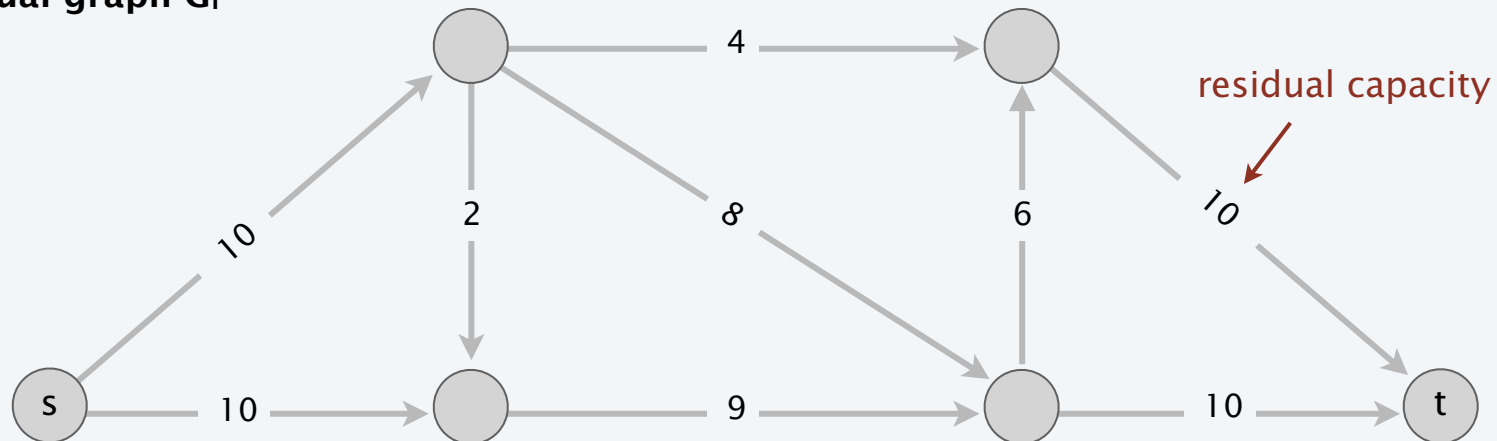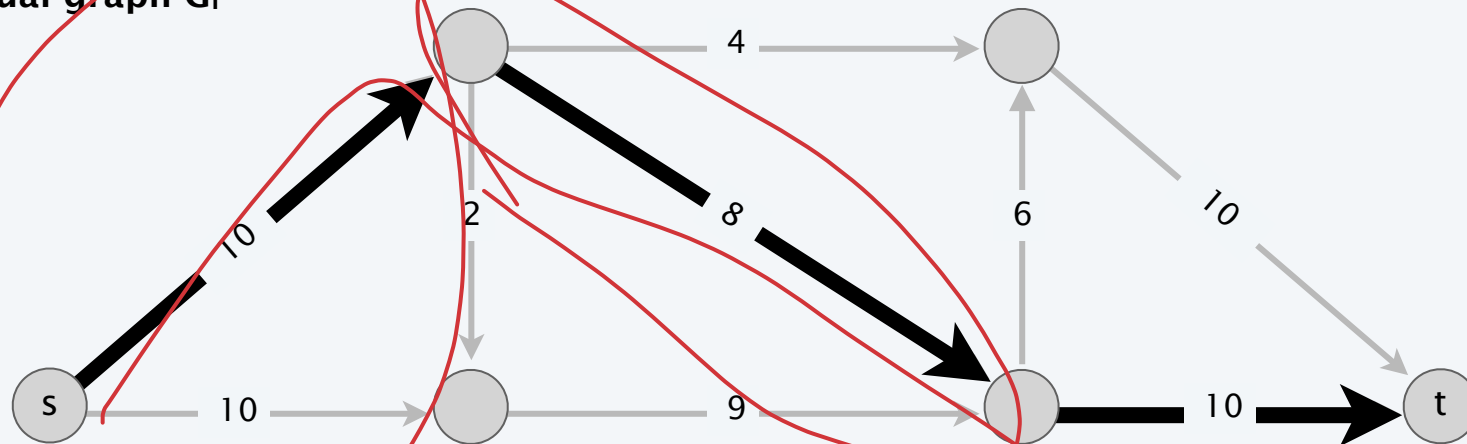
residual capacity

s   10   9   10   t

Ford-Fulkerson algorithm demo

network G

residual graph G_f

Ford-Fulkerson algorithm demo

network G

0 / 4

10
8̶ / 10   2 0̶ / 2   8 / 8   0 / 6   0 / 10

0 / 10   2 0̶ / 9   2 8̶ / 10

s   t   8 + 2 = 10

residual graph G_f

add 2 to

4

8   2   8   6   10

2

s   10   9   2   t

8

augmenting path.
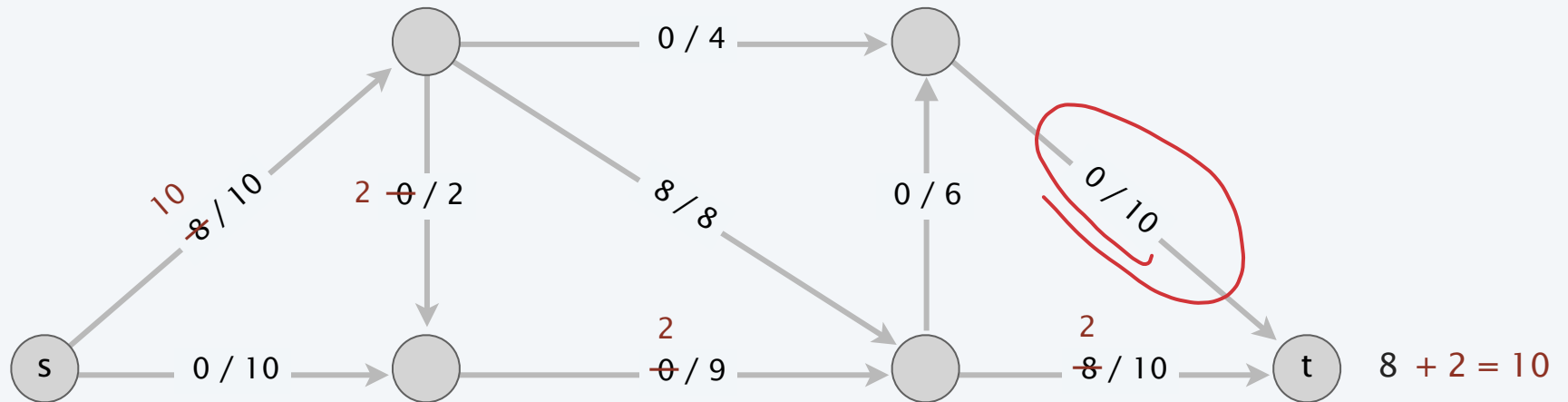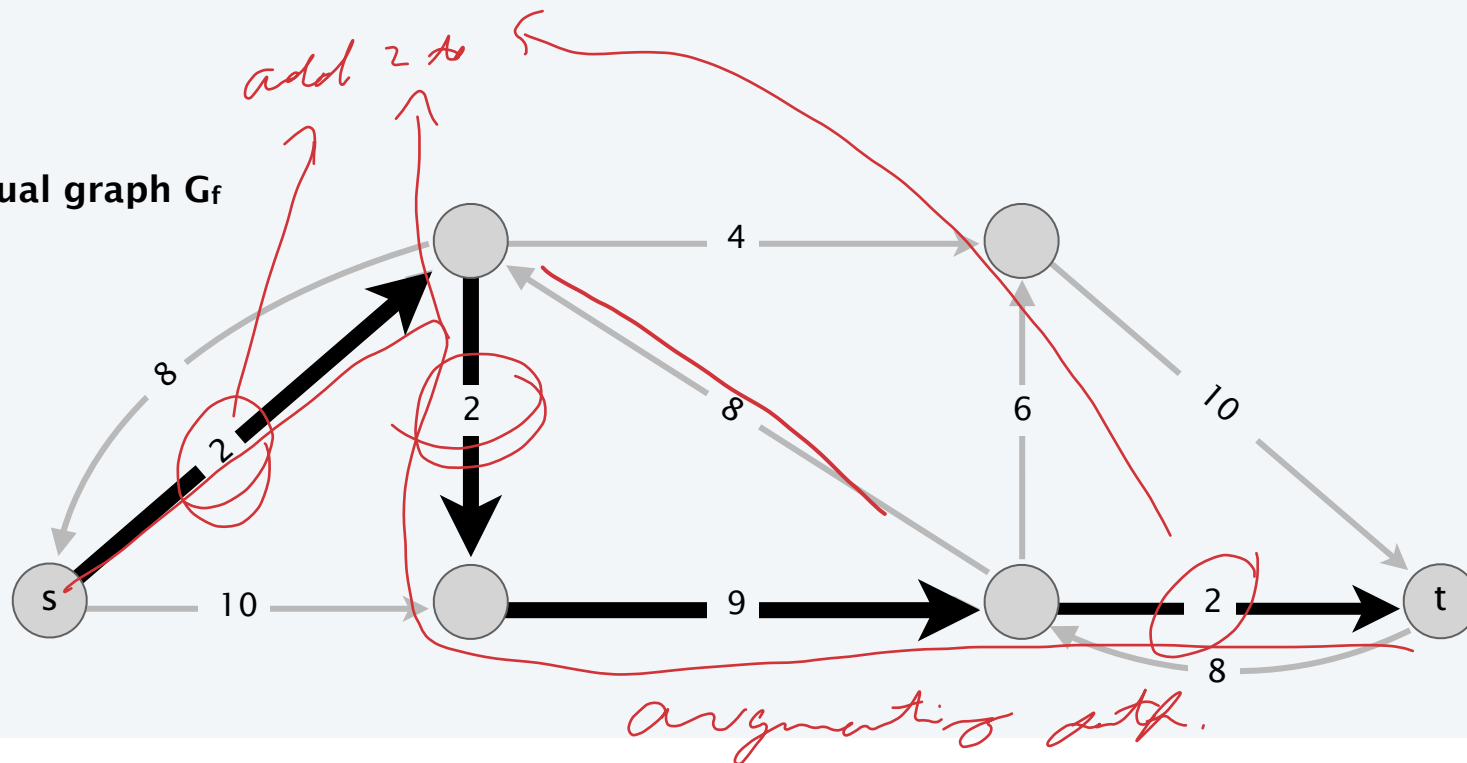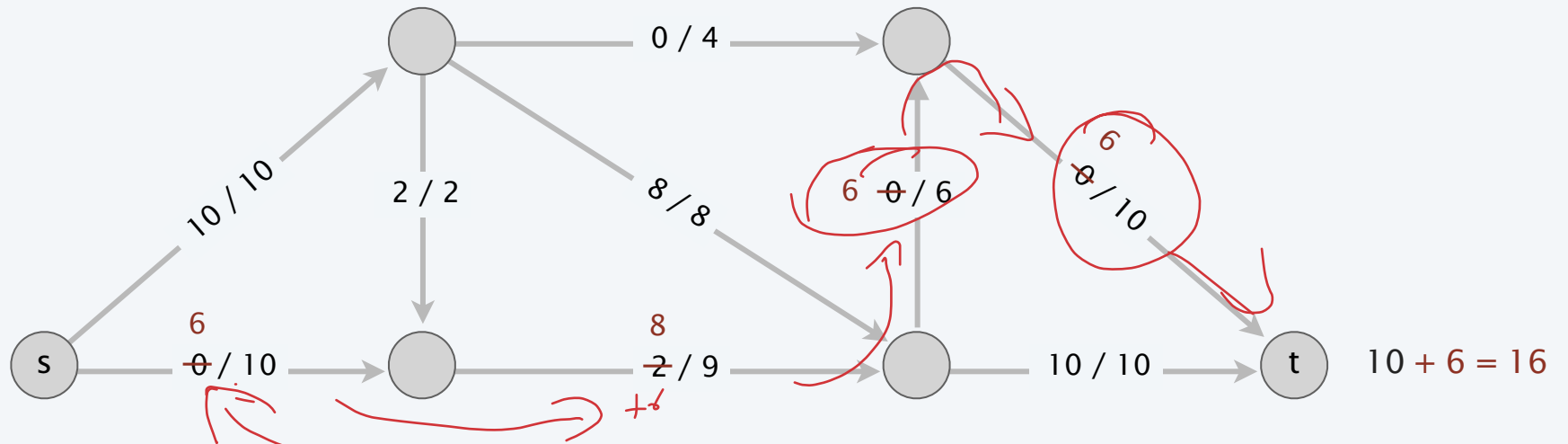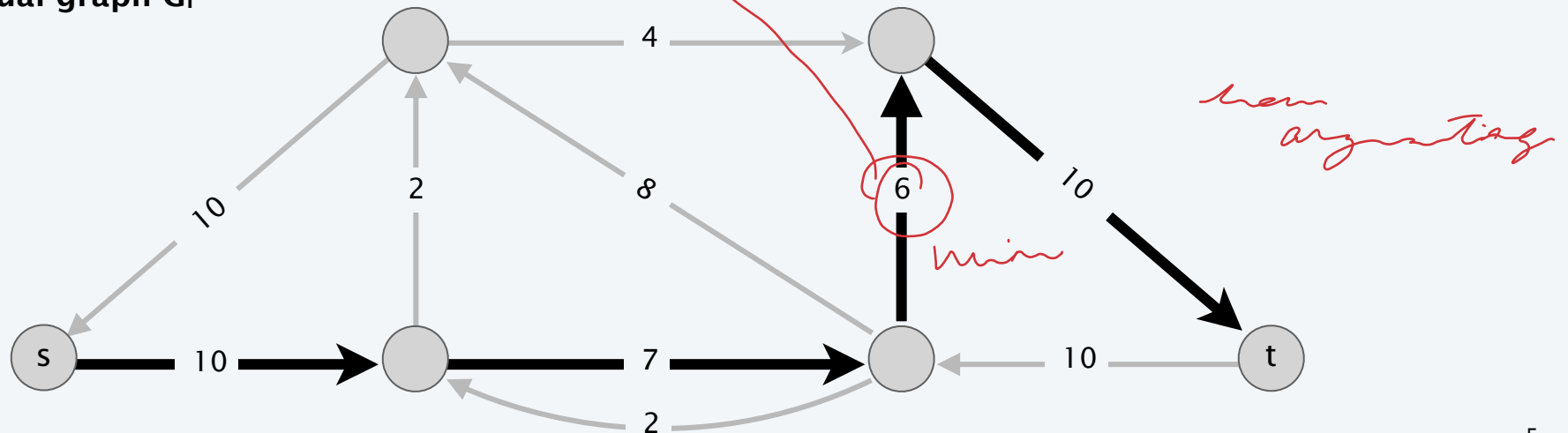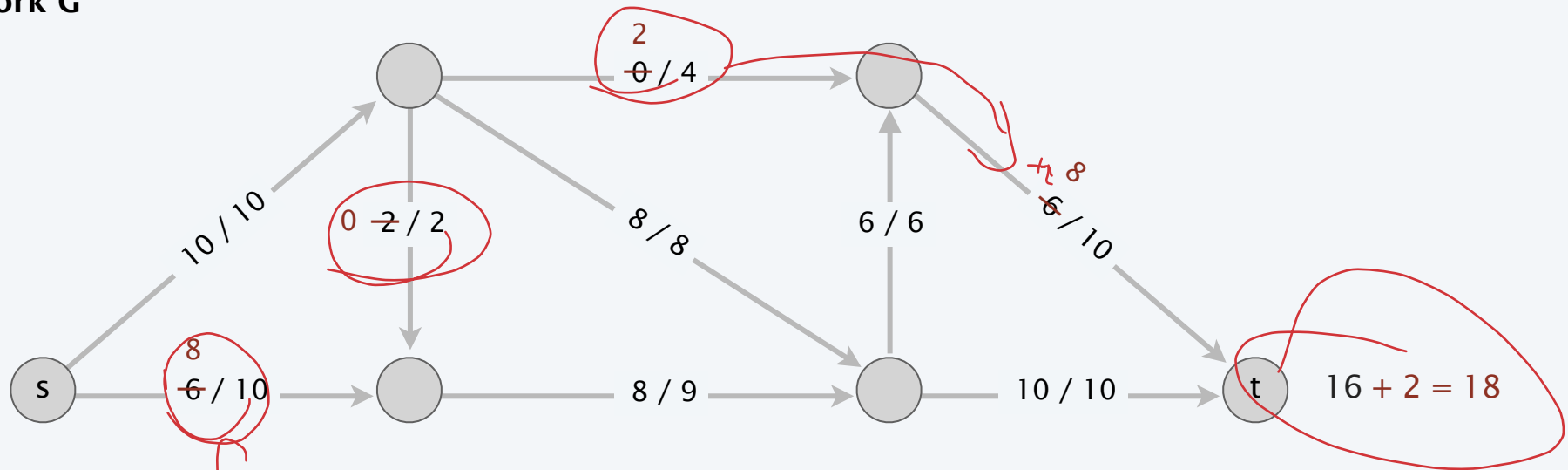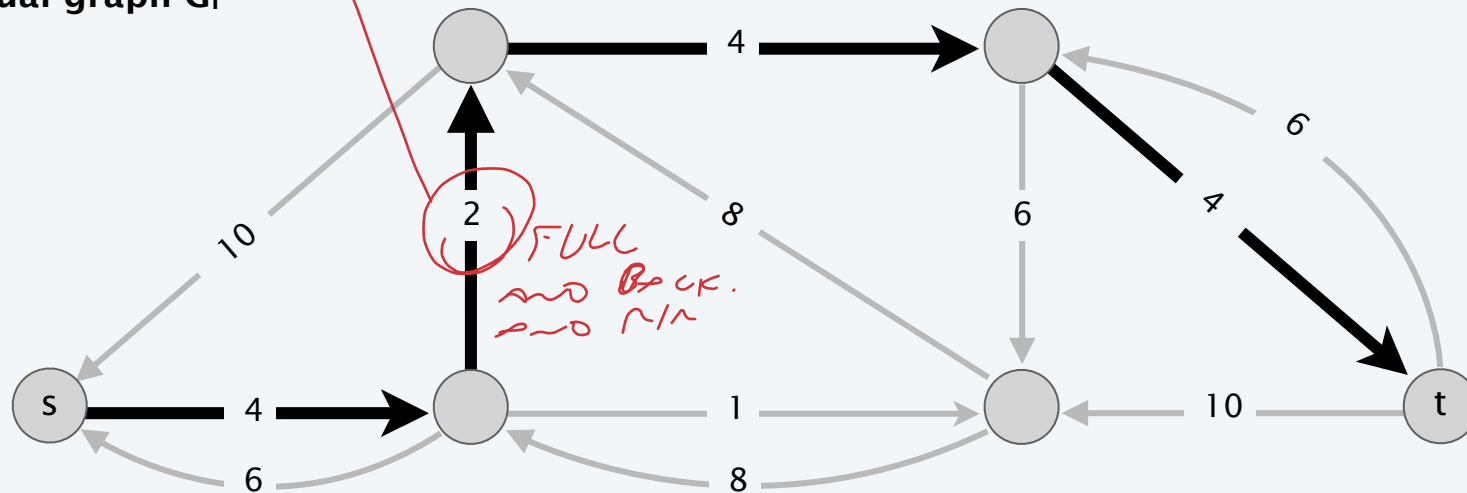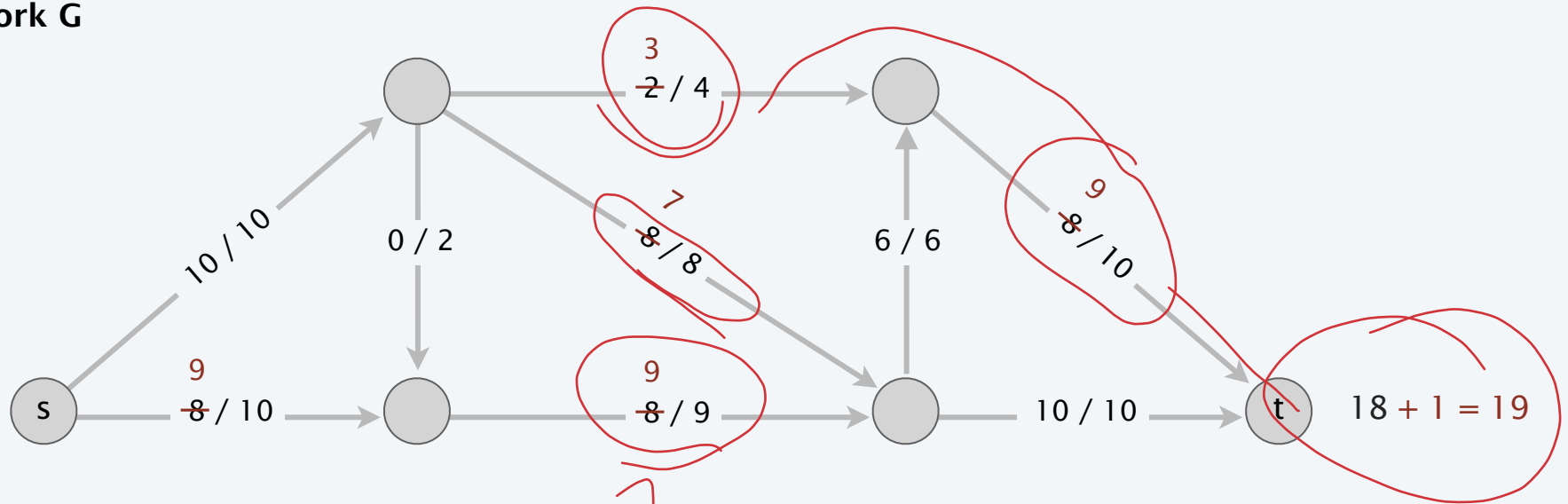
4

Ford-Fulkerson algorithm demo

network G

residual graph G_f

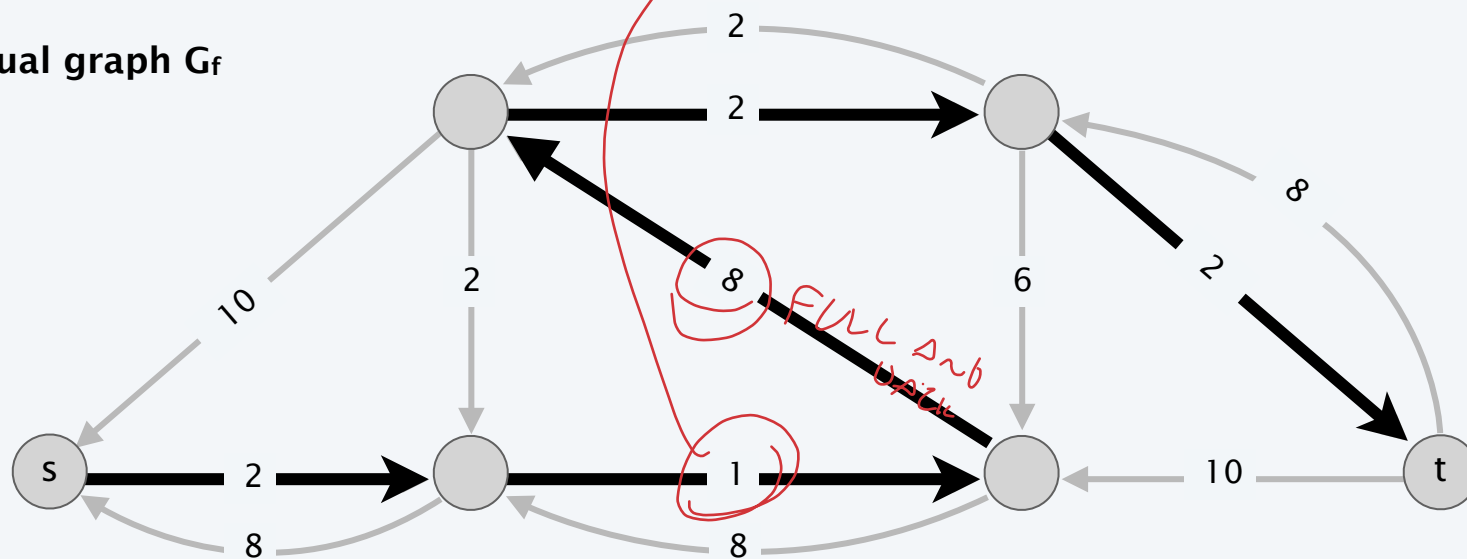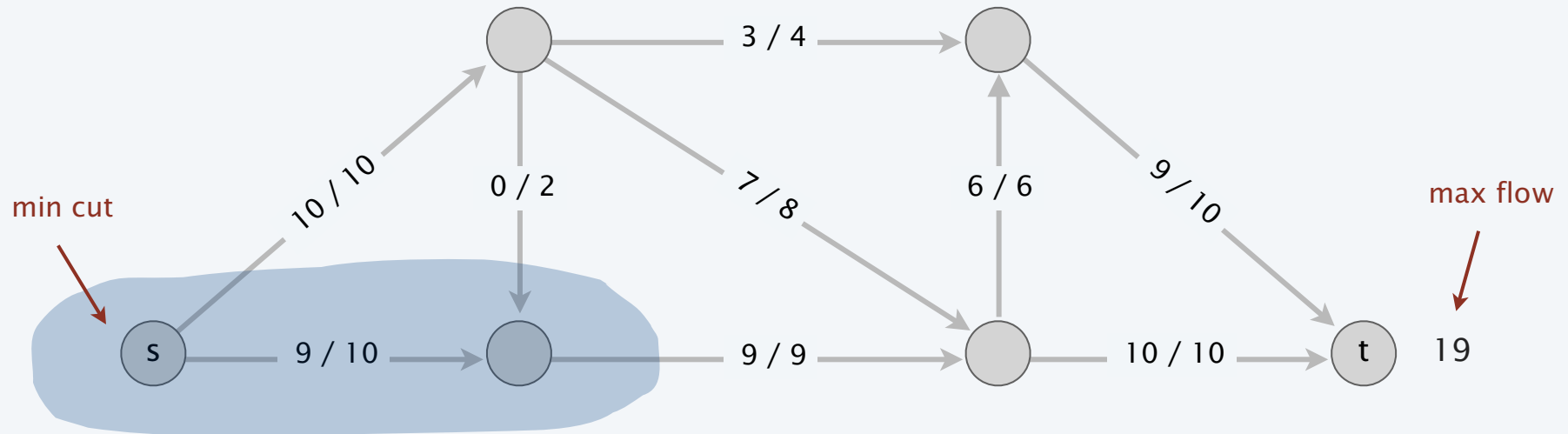# Ford-Fulkerson algorithm demo

network G

residual graph G_f

Ford-Fulkerson algorithm demo

network G

residual graph G_f

Ford-Fulkerson algorithm demo

network G

min cut

10 / 10

0 / 2

3 / 4

7 / 8

6 / 6

9 / 10

max flow

s   9 / 10   9 / 9   10 / 10   t   19

residual graph G_f

3

1

9

nodes reachable from s

10

2

7

6

1

1

s   1   9   10   t

9