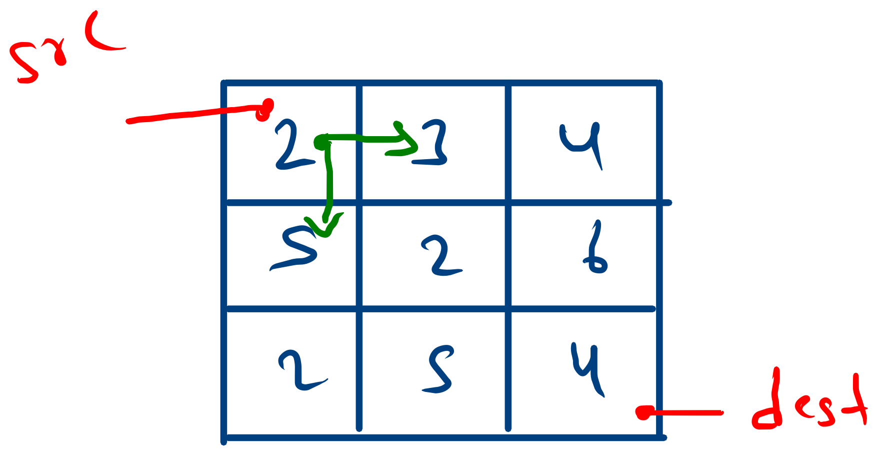
+V



moves

$\rightarrow$ h

$\downarrow$ v

$2+3+4+6+4 = 19$

$2+3+2+6+4 = 17$

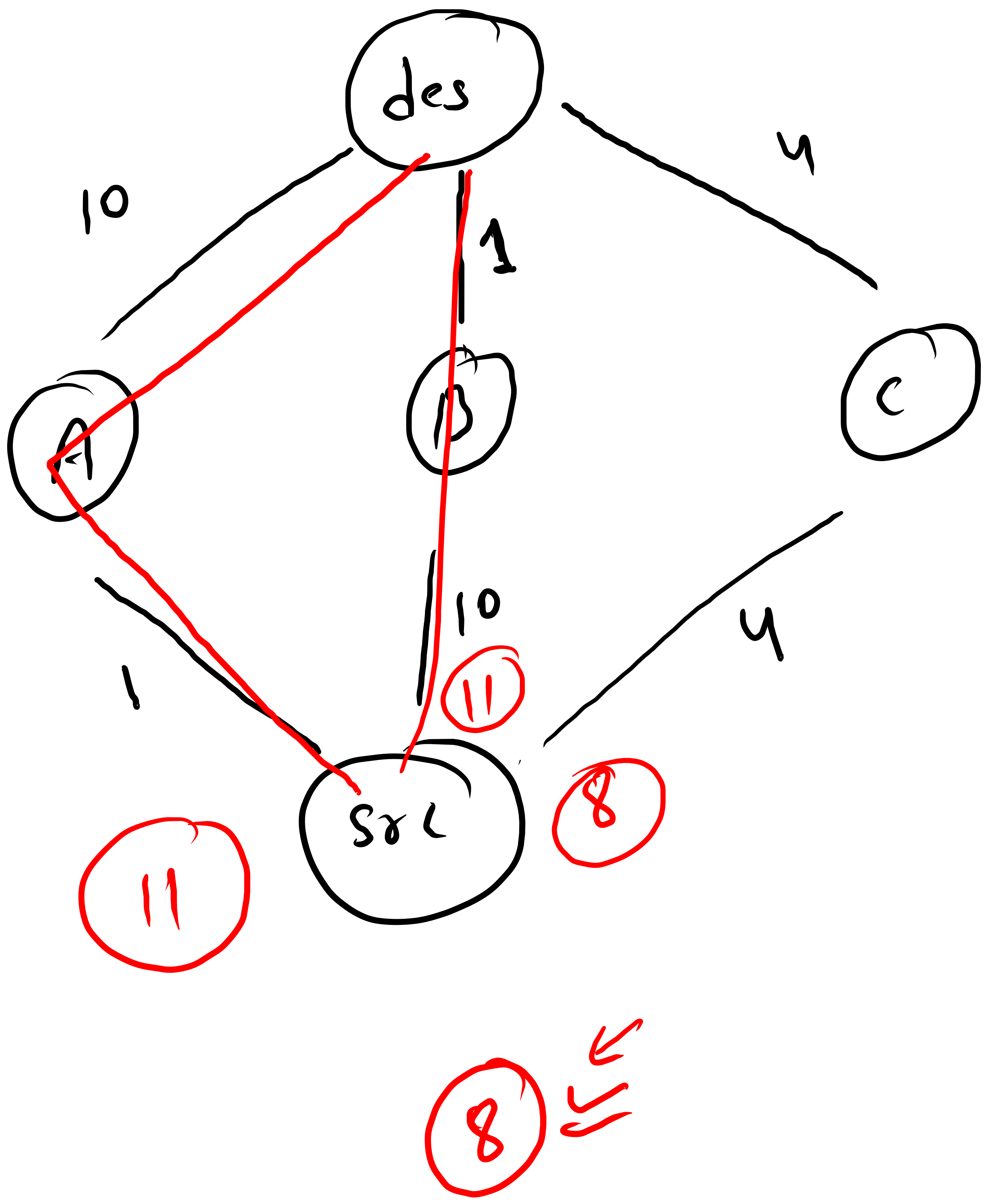
$2+3+2+5+4 = \boxed{16}$

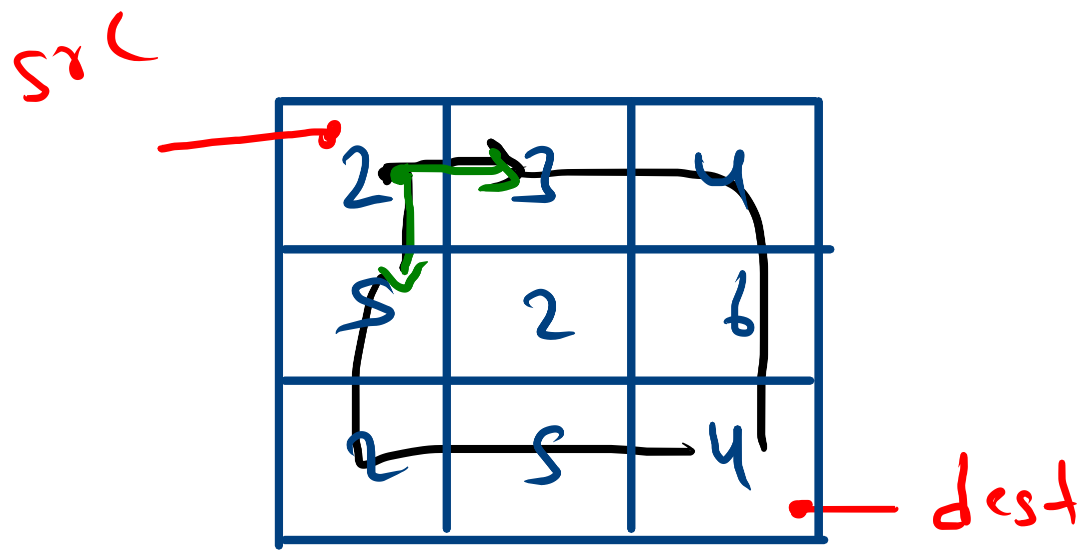
$2+5+2+6+4 = 19$

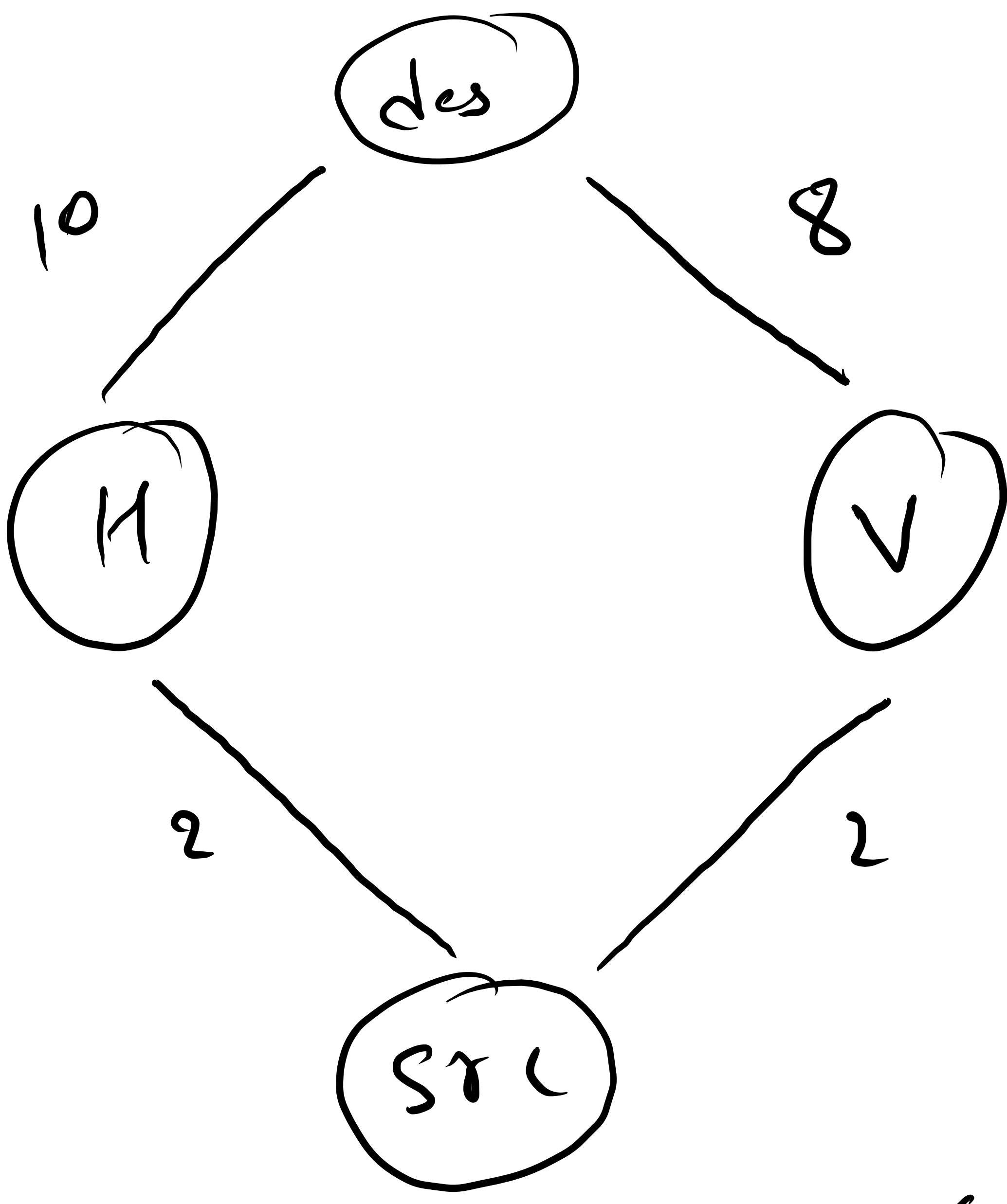
$2+5+2+5+4 = 18$

$2+5+2+5+4 = 18$

ans = $\boxed{16}$ $\leftarrow$


des
10
1
4
A
B
C
1
10
4
src
11
8
11
8
✓





$8 + 2 = 10$

n → 5
m = 4

$\boxed{i,j}$ to des , min cost

→ storage
→ meaning
✓ direction

2	3	4	6°	10°
5	2	6	4	3
2	$\boxed{5}$	4	9	7
5	8	$\boxed{5}$	8	4

$\boxed{5+8+4}$

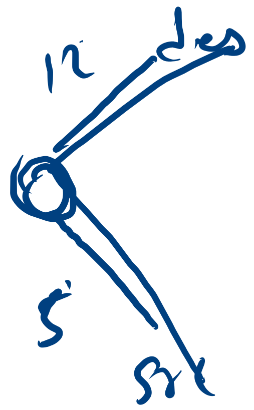
$\boxed{17}$

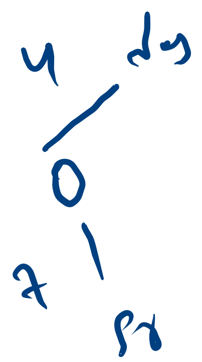
src

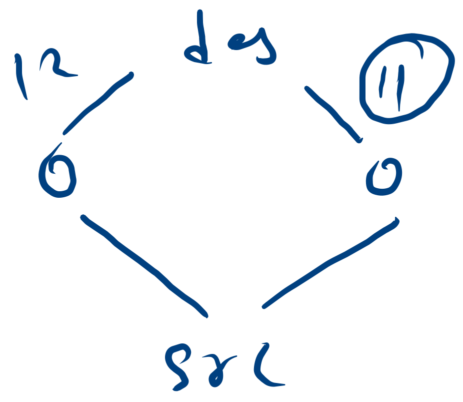
		m		m-1
n				
31	3+26 29	24+4 28	6+18 24	10+14 24
26+5 31	24+2 26	18+6 24	14+4 18	11+3 14
26+2 28	21+5 26	17+4 21	11+9 20	7+4 11
30	25	17	8+4 12	4

des

m
big
↓
small





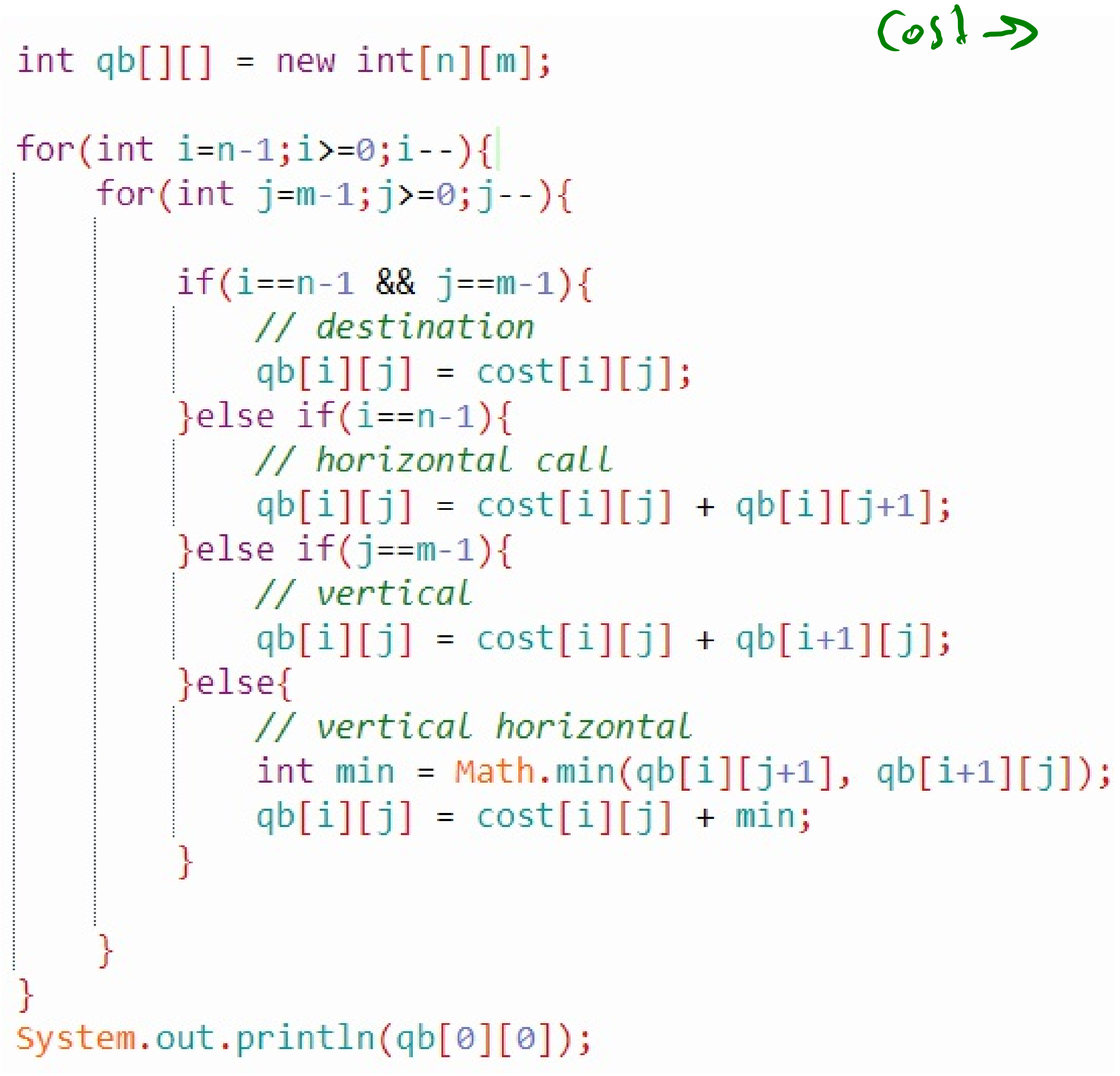


11 + 9 = 20

```
i ← n-1 to 0
    j ← m-1 to 0
    {
        ≡
    }
```

dp

small
↓
big



```
int qb[][] = new int[n][m];

for(int i=n-1;i>=0;i--){
    for(int j=m-1;j>=0;j--){

        if(i==n-1 && j==m-1){
            // destination
            qb[i][j] = cost[i][j];
        }else if(i==n-1){
            // horizontal call
            qb[i][j] = cost[i][j] + qb[i][j+1];
        }else if(j==m-1){
            // vertical
            qb[i][j] = cost[i][j] + qb[i+1][j];
        }else{
            // vertical horizontal
            int min = Math.min(qb[i][j+1], qb[i+1][j]);
            qb[i][j] = cost[i][j] + min;
        }

    }
}
System.out.println(qb[0][0]);
```

cost →

2	3	4	6	10
5	2	6	4	3
2	5	4	9	7
5	8	5	8	4

j

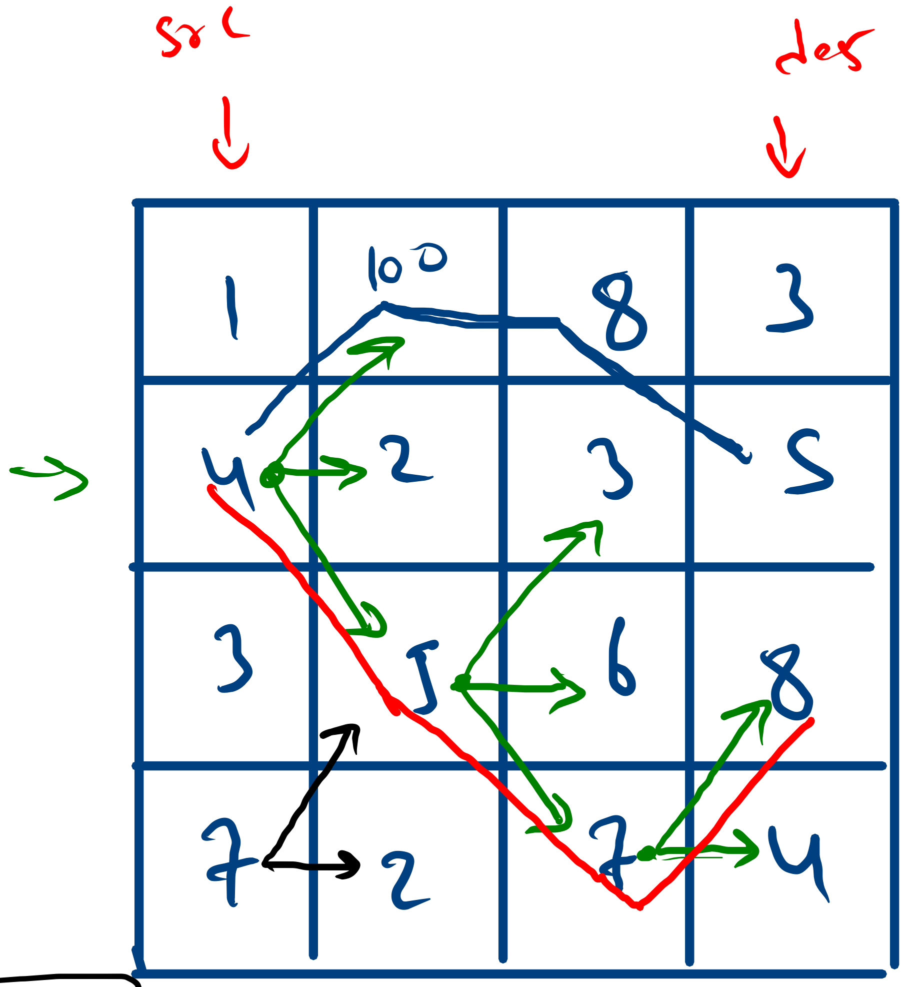
qb →

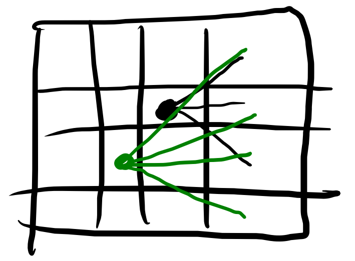
i

			7+4+9	7+4
5+	8+5 +8+4	5+8+4	8+4	4

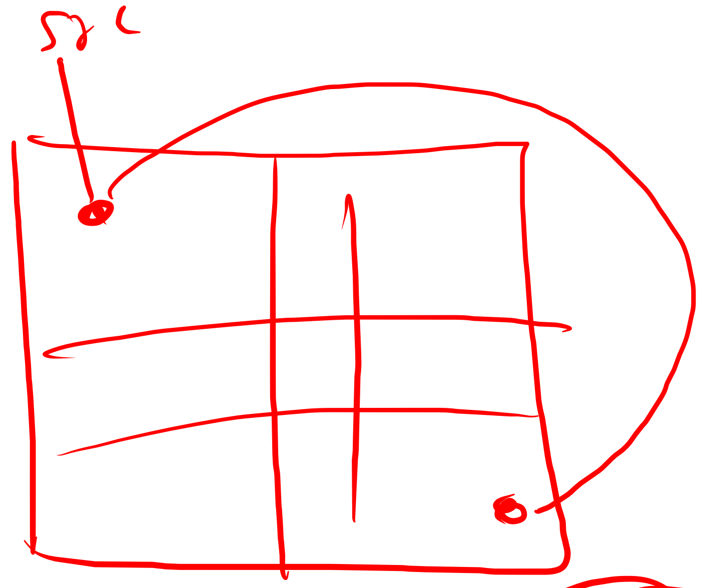
H.W

Goldmine





$\boxed{4+100+8+5}$



$\boxed{\text{des}}$

$\boxed{8+7+5+4}$

14 + 8

$\boxed{24}$ ←

path 2

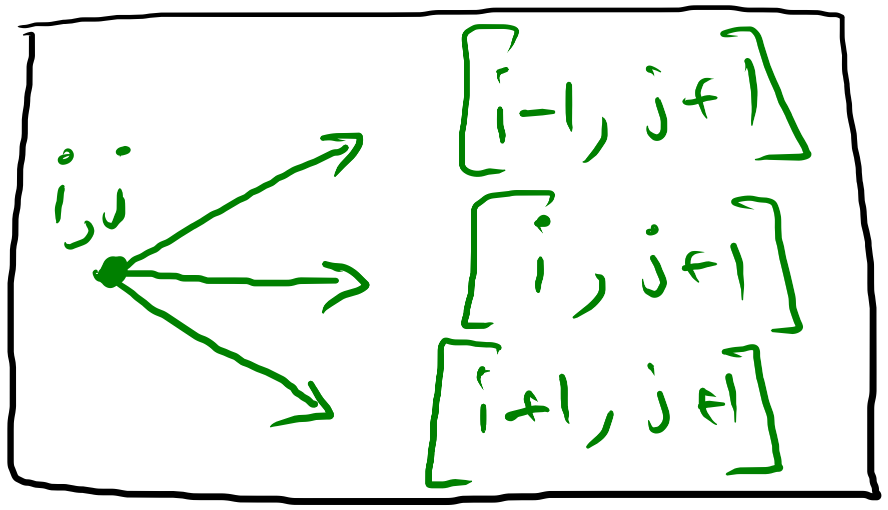
$\boxed{7+5 + 7+8}$

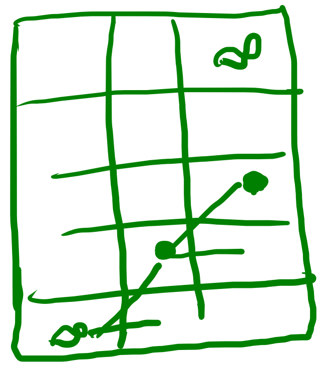
12 + 15

$\boxed{27}$

movement

max





no duplicate allowed

$$\text{Coins} = [\,4 \quad 2 \quad \bar{7} \quad 1 \quad \bar{3}\,]$$

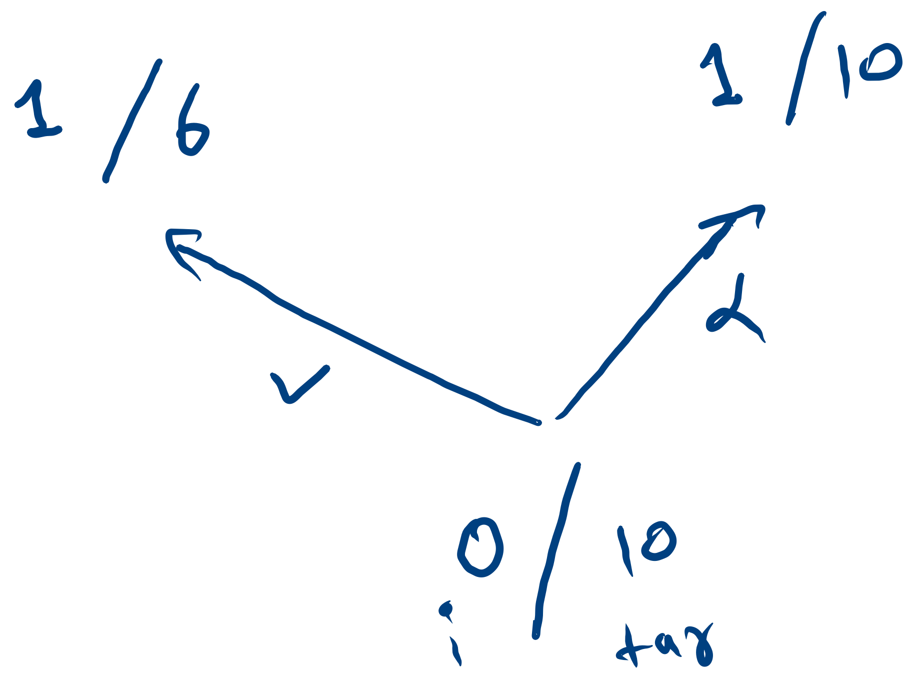
target = 10 → true

target → 20 → false

$7+3=10$

target → 14

→ Storage meaning direction



$\boxed{\text{small} \downarrow \text{big}}$

$[4 \quad 2 \quad 7 \quad 1 \quad 3]$ n

tar = 10

		0	1	2	3	4	5	6	7	8	9	10
0	4	✓				✓						
1	2	✓	α	✓	α	✓	α	✓	α	α	α	α
2	7	✓	α	✓	α	✓	α	✓	✓	α α α	7+2 ✓ 7+ 90L	α
3	1	✓	1+0 ✓	✓	1+2 ✓	✓	1+4 ✓	✓	✓	1+7 ✓	✓	1+7+2 ✓
4	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

$\cancel{✓} \quad \cancel{α}$

logically

$8 - 1 = 7$

$10 - 1 = 9$

[n-1][tar]

repetition

coin [2 3 5 6]

target 7

combination

permutation

	0	1	2	3	4	5	6	7	8
3	1	0	0	1	0	0	0	0	0
2	1	0	2+0	3	2+2+0				

2

2 + 5 = 7

2 + 2 + 3 = 7

2 + 2

	0	1	2	3	4	5	$\boxed{6}$	7	8	9
2	0	•	2	•	$\boxed{2+2}$	•	$\boxed{2+2+2}$			

$5-2=3$

$4-2=\boxed{2}$ $\quad$ $6-2=\boxed{4}$

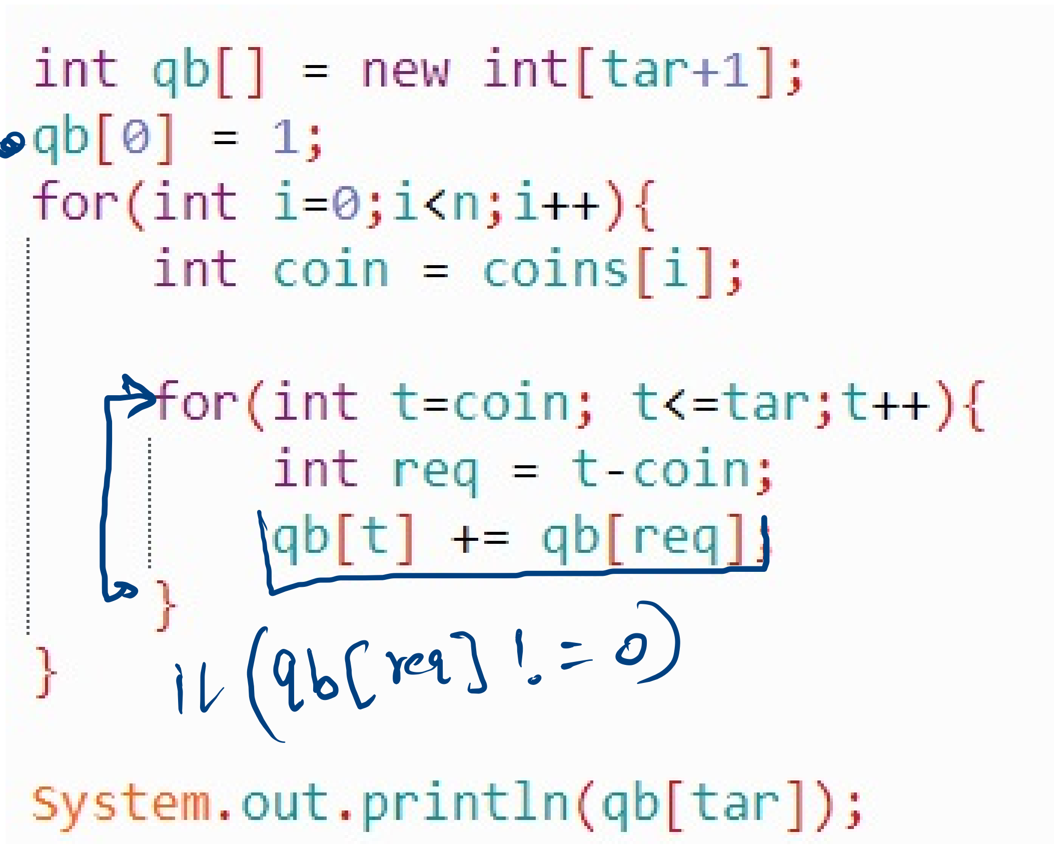
coins [2 3 5 6]

target → 7

tar	coin	req
6	6	= 0
7 -	6	= 1

	0	1	2	3	4	5	6	7
dp →	1		1	1	1	~~1~~ 2 1	~~2~~ 3	~~1~~ 2
	0		2+0	0+3	2+2+0	2+3	2+2+2+0	2+2+3
						5	3+3	2+5
							6	

storing $\boxed{\text{tar}+1}$



```
int qb[] = new int[tar+1];
qb[0] = 1;
for(int i=0;i<n;i++){
    int coin = coins[i];

    for(int t=coin; t<=tar;t++){
        int req = t-coin;
        qb[t] += qb[req];
    }
}

System.out.println(qb[tar]);
```

if (qb[req] != 0)

coins → [2 3 5 6] 1

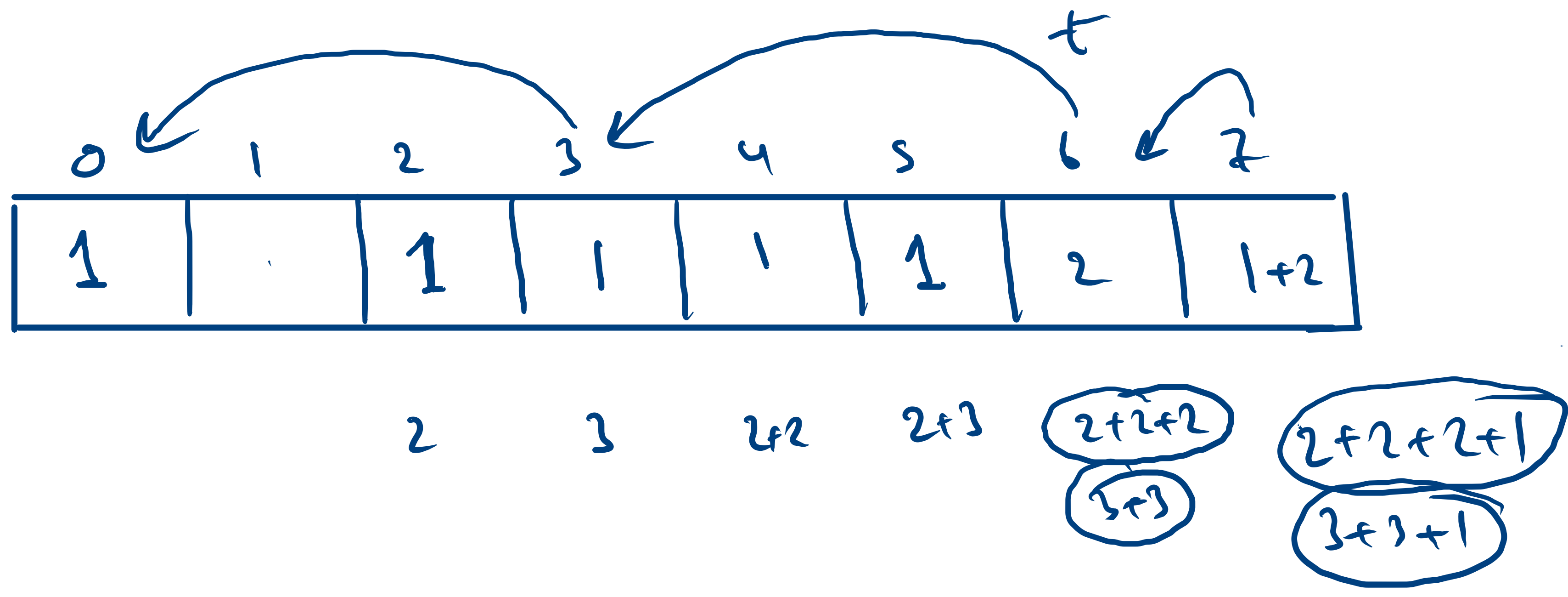
tar → 7

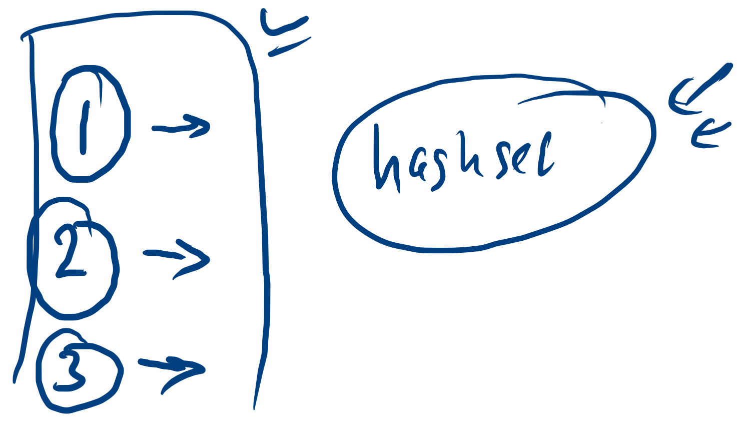
5 - 3 = 2

6 - 3 = 3

7 - 3 = 4

7 - 1 = 6





coin [2 3 5 6]

target 7

permut ✓

ach $\boxed{7}$

1   0

2

3

2 + 5 = 7 , 5 + 2 = 7

2 + 2 + 3 = 7 , 2 + 3 + 2 = 7

3 + 2 + 2 = 7

3+2+1

6

3

0	1	2	3	4	5	6	7
1	0	1	1	1			1

1+2+3

1+3+2

2+1+3

2+3+1

3+1+2

3+2+1

1 $\overset{\longrightarrow}{2}$ 3

combin

1 → 2

2 → 3

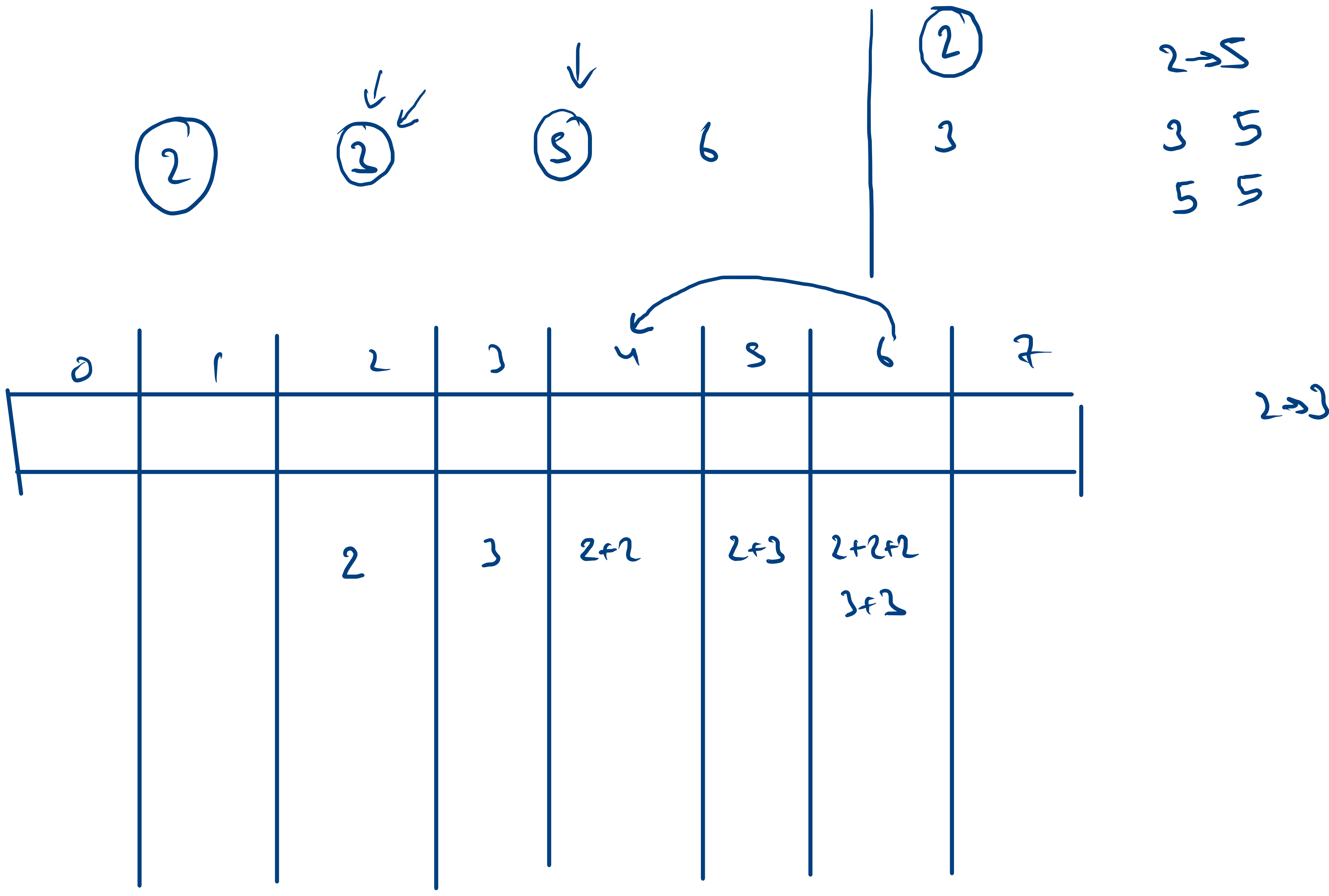
perm

2 → 3

$\overset{\longrightarrow}{3}$ 2 ← perm

1 2 3

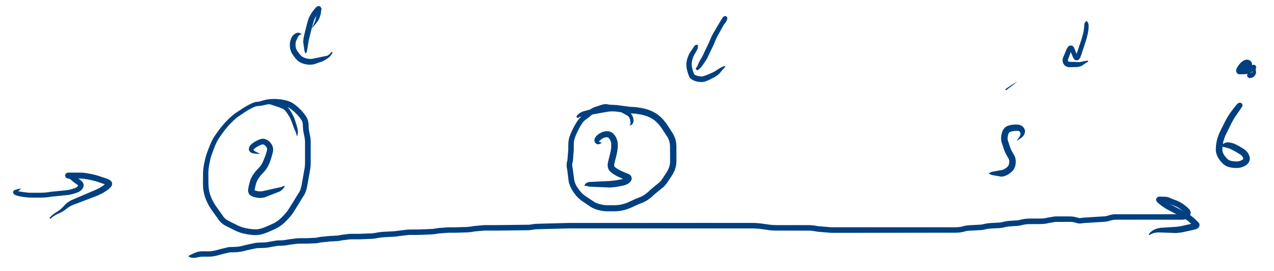
1 3 2 perm



Permutation

Logic

expe



6-2 = 4

6-3 = 3

7-2 = 5

7-3 = 4

7-5 = 2

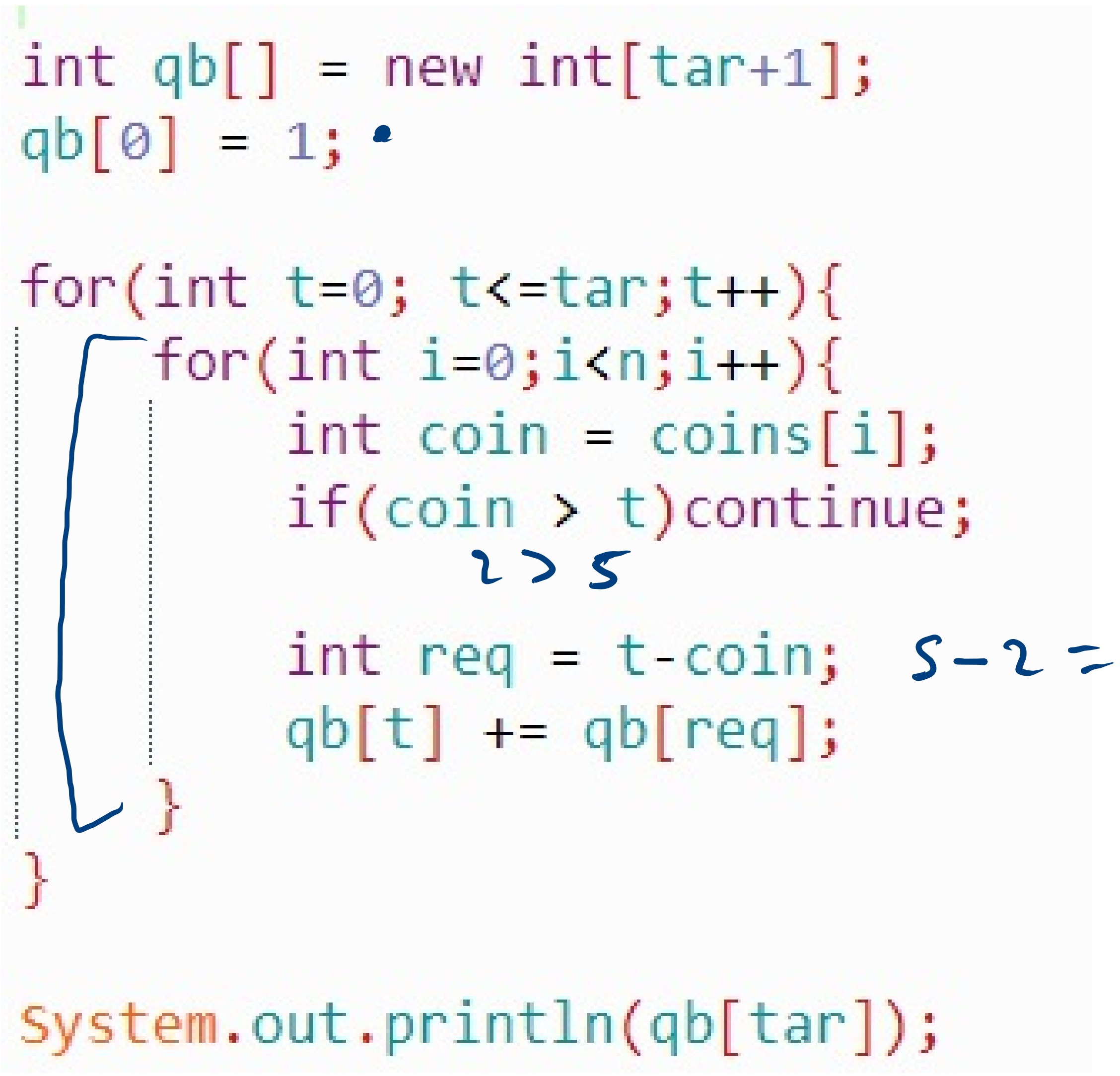
0	1	2	3	4	5	6	7
•		2	• 3	2+2	3 2	2 2 2	3 2 2
					2 3	3 3	2 3 2
					• 5	• 6	5 2
							2 2 3
							2 5

2+3

3+2

$\textcircled{2}$ 3 5 6

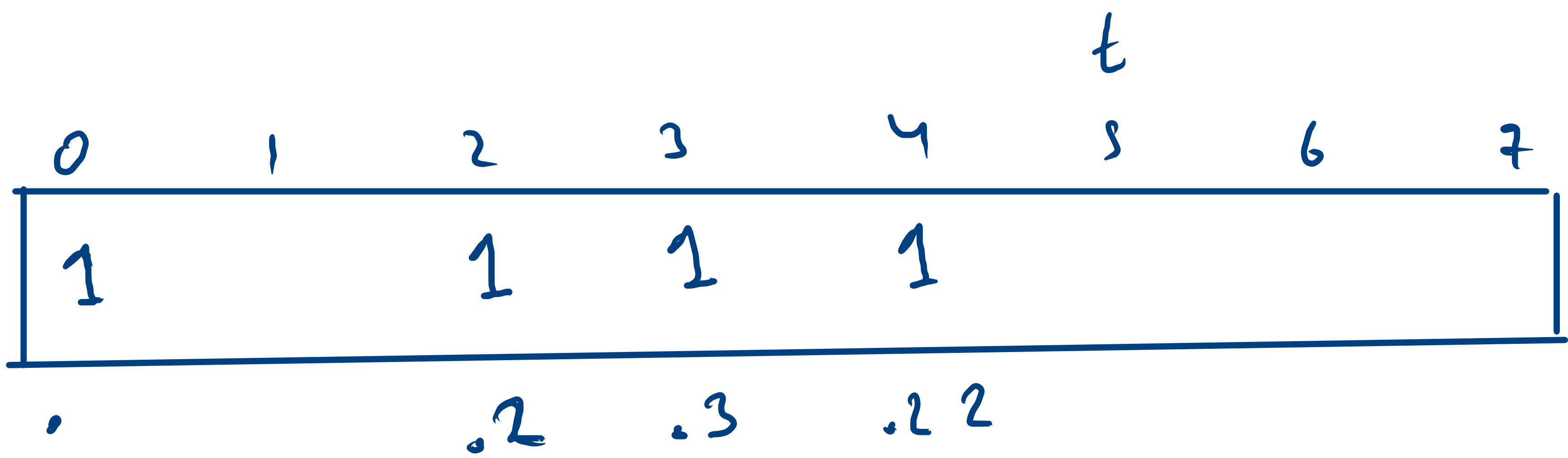
tar → 7



```
int qb[] = new int[tar+1];
qb[0] = 1;

for(int t=0; t<=tar;t++){
    for(int i=0;i<n;i++){
        int coin = coins[i];
        if(coin > t)continue;

        int req = t-coin;
        qb[t] += qb[req];
    }
}

System.out.println(qb[tar]);
```

2 > 5

5 − 2 = $\textcircled{3}$


t
0 1 2 3 4 5 6 7
1 1 1 1
2 3 2 2