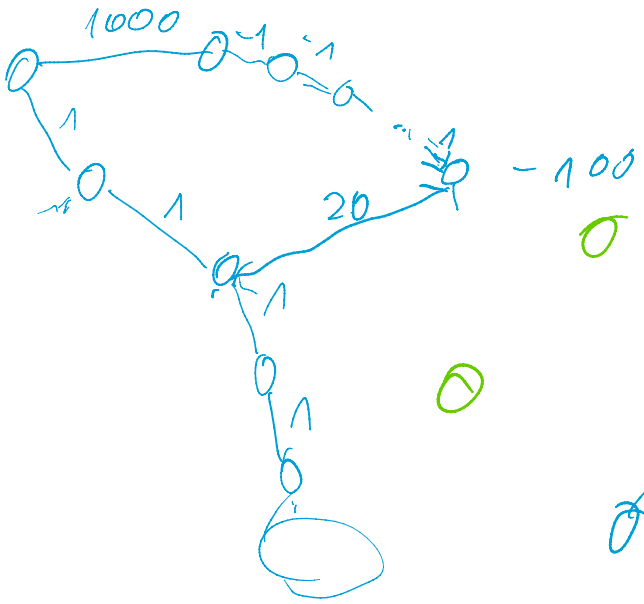
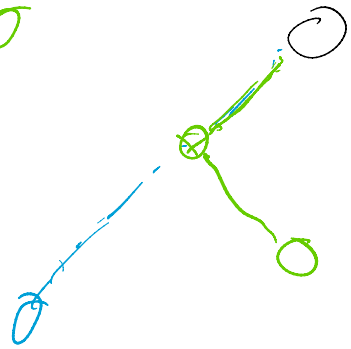
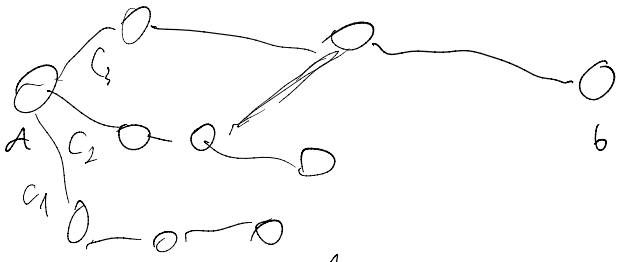
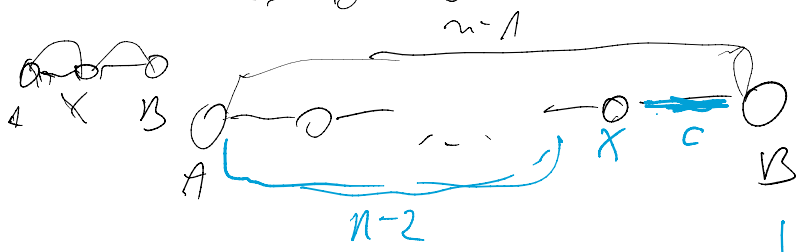
K13

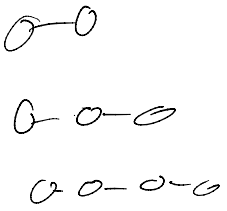
Friday, 17 December 2021 16:40

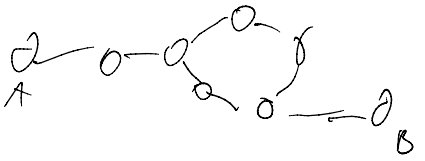






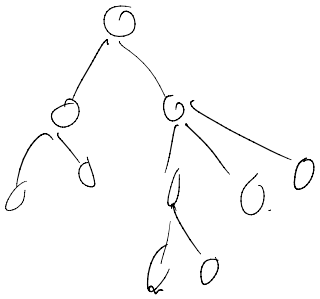


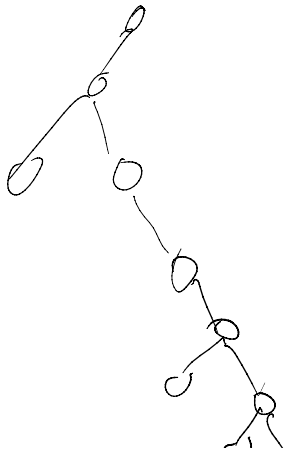


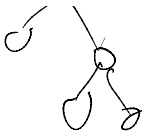


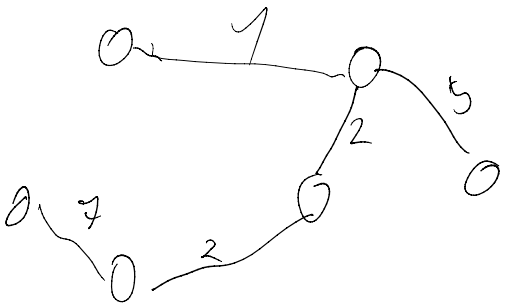
dist[B] = min A ~ B

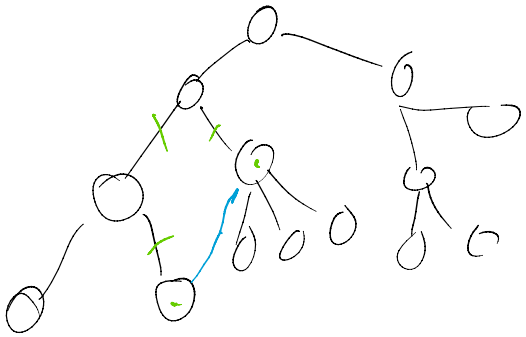
dist[X] + c ≥ dist[B]



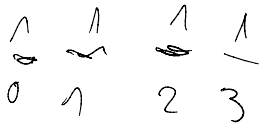


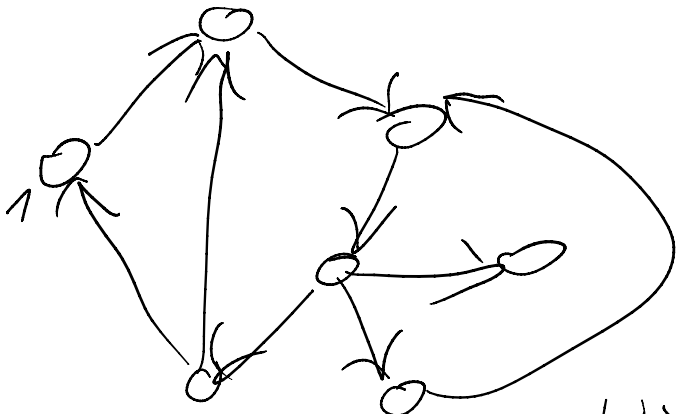






1 2 7

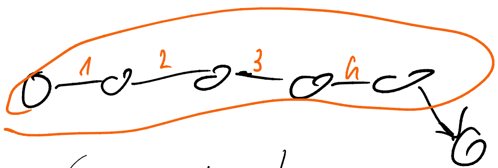




$a \to b \iff dist[a][b] = cost$

$dist[x][y] = INF$

```
for c=0 c<n
  for a=0 a<n
    for b=0 b<n
      dist[a][b] = min(dist[a][b], dist[a][c] + dist[c][b]);
```



$$\frac{a_1+a_2+a_3+a_4}{4}$$

$$A = \frac{a_1+\dots+a_n}{n} \quad |\cdot n$$

$nA = a_1+\dots+a_n$

$a_1+a_2+\dots+a_n - nA = 0$

$a_1-A + a_2-A + \dots + a_n-A = 0 \iff L \cdot 0 < 10^{-4}$

$<$ – średnia za duża

$>$ – średnia za mała

$ct = 50 \sim 100 \qquad 0 \sim 10^6 \qquad 10^{-4} \implies 10^{10}$

$2^{ct} \geq M$

10^6 - - - - - - 10^0 | 10^1 10^2 10^3 10^{-4}

$ct=50$

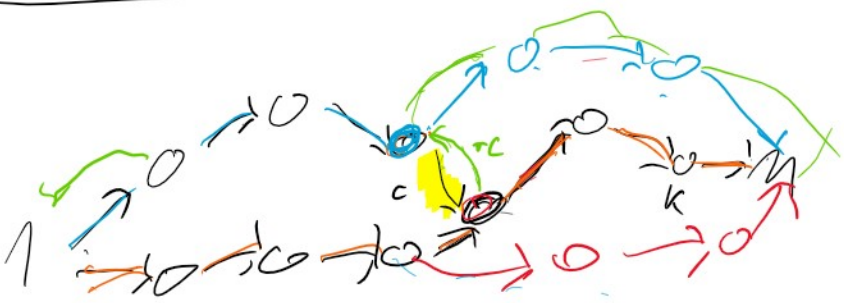
```
L=0, R=10^6, mid
while ct-- > 0
  mid=(L+R)/2
  FW(mid)
  find GT zero
  if ↓ == true
```

```
if dist[a][b] != INF
  dist[a][b] -= mid;
```

$dist[i][i] > 0$

```
if ↓ .== true
   res = mid
   L = mid
else
   R = mid
```

$O(n^3 \cdot \log 2)$




```
if(dist[x] != para.odd) continue;
if(para.v == n) break
```