

11 3 1

$$1 \times 1 + 1 \times 2 + 1 \times 3 = 6$$

$$5 \times 1 + 1 \times 2 + 1 \times 3 = 8$$

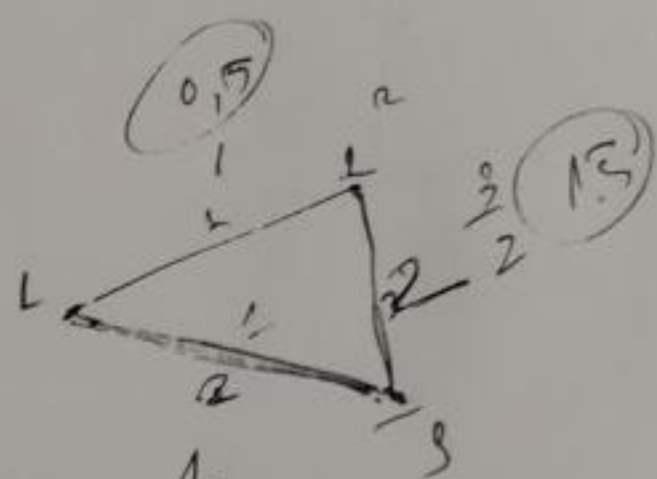
$$1 \times 1 + 3 \times 2 + 1 \times 3 = 10$$

$$5 \times 1 + 1 \times 2 + 1 \times 3 = 12$$

$N=4$  2 đóm 2 face 2

$$\frac{(n-1)}{k \cdot k - 1} + N + \frac{1}{k \cdot k \cdot k}$$

2.



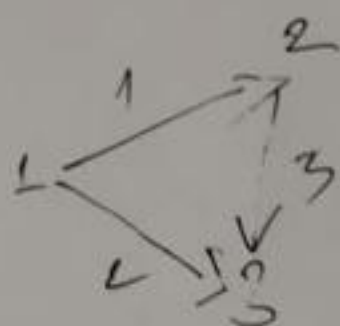
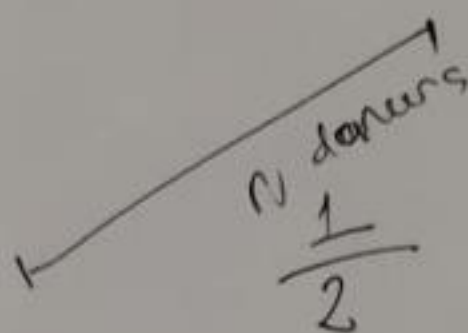
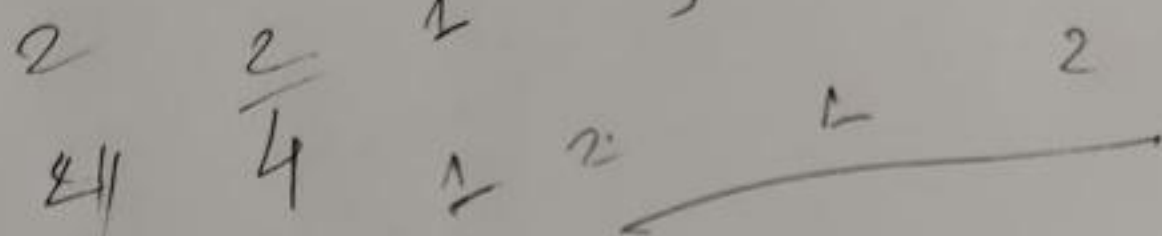
$$1 \rightarrow 2 \rightarrow 3$$

$$1 \rightarrow 2 \rightarrow 4 \rightarrow 3$$

$$1 \rightarrow 3$$

4 đóm

2 đóm



$$\frac{1}{1} + \frac{3}{2} = 2.5$$

$$1$$

$$2.5 +$$



$$1 \rightarrow 2 \rightarrow 3$$

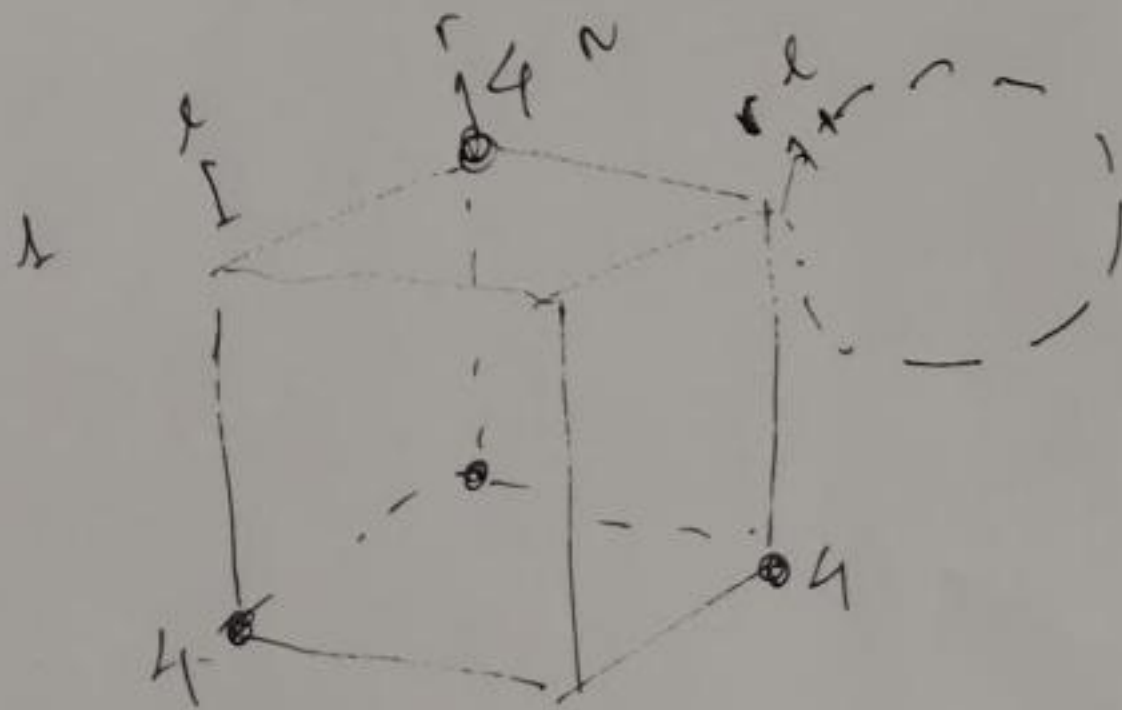
$$1 \rightarrow 3$$

$$E(1) = 0$$

$$E(2) = \frac{1}{2} \cdot 1 = 0.5$$

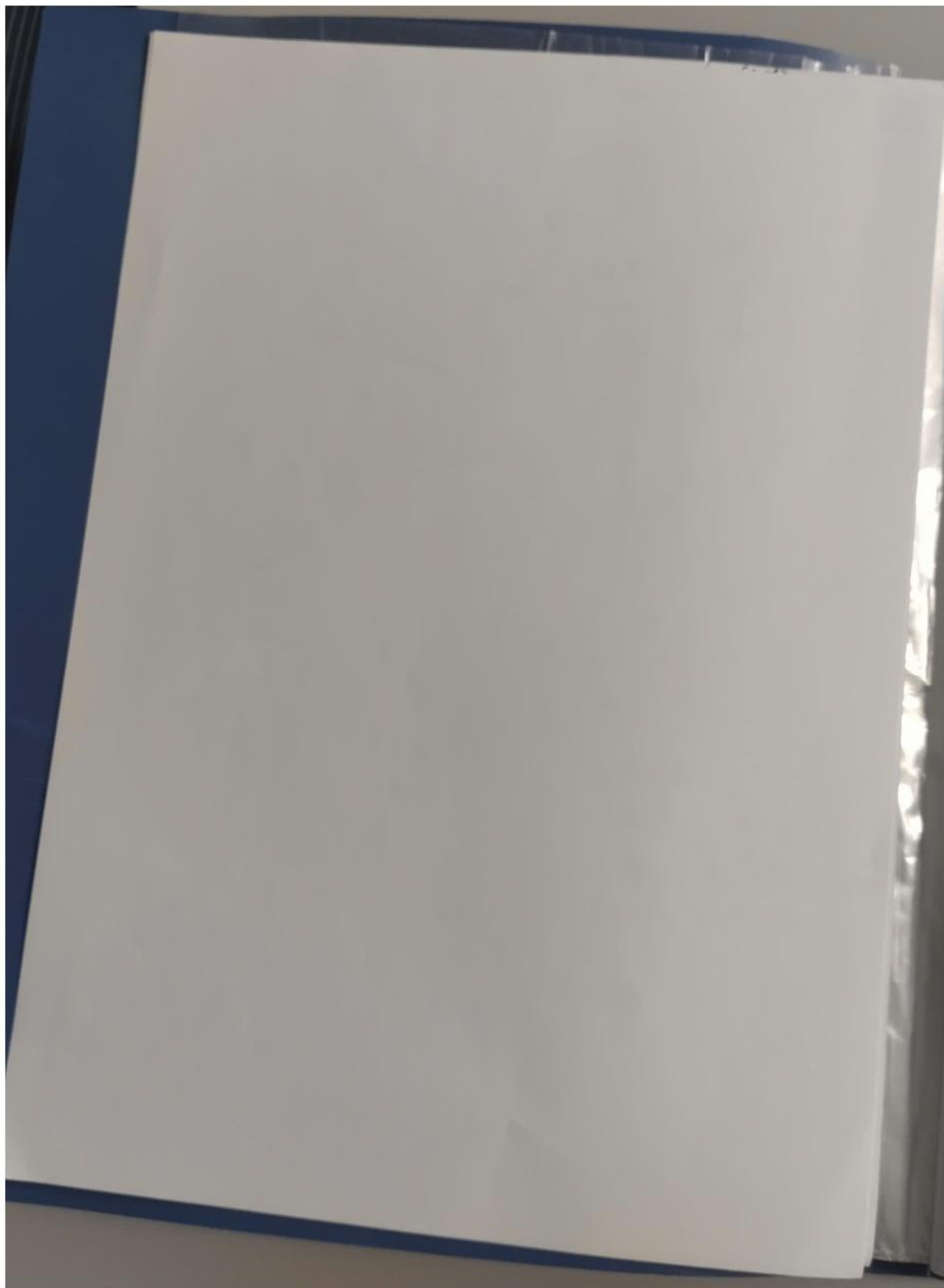
$$E(123) = \frac{1}{2} (0.5 + 3) = 1.75$$

$$E(13) = \frac{1}{2} \cdot 2 = 1$$



$$L/1.75$$









n and k.

$n = 4 \rightarrow k = 0, 1, 2, 3, 4$

$k \leq n-1$

sort.

(cat A - 10) = 10

$\rightarrow$  sort  $\rightarrow$  (cat A 10 cat A 3 cat A 4.)

temp-det: cat A - 10

3 8

10 11

visited.add

cat A 3

cat A 4

cat A 10

cat B 1

cat B 2

cat B 2

cat C 5

not in w

(cat, code = input.split())

if cat not in det:

det[cat + code] = code

if cat + code not in det:

countdet[cat + code] = 1

sorted: det

for key in det:

if key.split()[0] not in visited:

temp-det.append[key] = key.split()[1]

compare case - insensitive

add a tuple.

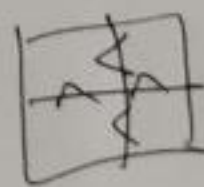
$a < b$   
 $c < d$

if  $a < b$   
and  $a < c$

b c d  
c < d

left < right

top < bottom



4

bin search

0.0      3, 1      -2, 4

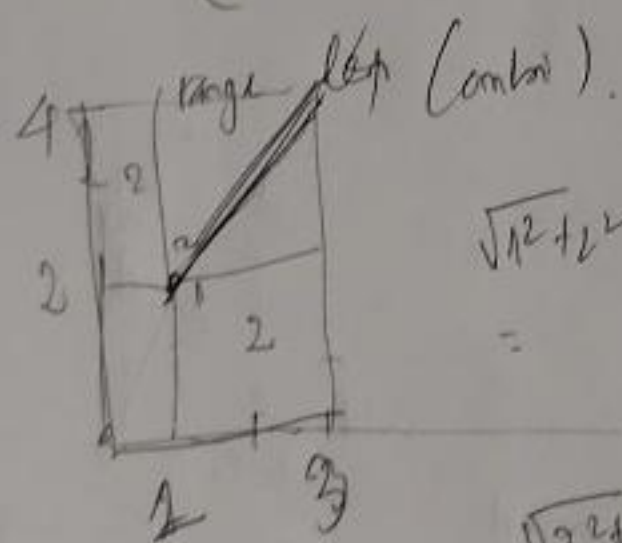
5.0      -2, 3

$$\text{abs}(ax_0 - x_0)$$

$$\text{abs}(x_1 - x_2)^2 + (y_1 - y_2)^2$$

$$\max((\text{comb}[0][0] - \text{comb}[1][0])^2 + \dots)$$

$$(a-b)^2$$



$$\sqrt{1^2 + 2^2} + \sqrt{2^2 + 1^2}$$

$$\sqrt{2^2 + 2^2}$$

2

6

body  
is

0.595

1422  
5964  
42



1 2 3 4  
1-1-1-1

2 = (0) 100  
1 = (1) 100

1 0 1 0  
0 1 0 1

1 1 1  
0 1 0  
1 0 1  
1 0 1  
0 0 0

1 1 1  
0 1 0  
1 0 1

$$[v] = [T]q = [T]n$$

0 0 0 0  
0 0 0 0  
0 0 0 0  
0 0 0 0  
0 0 0 0

1 2 1 = 1

is odd

1 2 1 =

100  
100

0 2 1 3 5 7 9  
2 4 6 8 10  
3 5 7 9 11  
4 6 8 10 12  
5 7 9 11 13  
6 8 10 12 14  
7 9 11 13 15  
8 10 12 14 16  
9 11 13 15 17  
10 12 14 16 18  
11 13 15 17 19  
12 14 16 18 20  
13 15 17 19 21  
14 16 18 20 22  
15 17 19 21 23  
16 18 20 22 24  
17 19 21 23 25  
18 20 22 24 26  
19 21 23 25 27  
20 22 24 26 28  
21 23 25 27 29  
22 24 26 28 30

for  
return -1  
for  
return 0



$$\text{count}(0) = \text{count}(1)$$

$$= \text{count} = 1$$

$$= 0 \times 0 \times 0 = 0$$

$$0 \times 0 \times 0 = 0$$

1 2 3 4 5 6 7 8 9 10

range(0, len(arr))  
 (i, i+k) for i in range(0, len(arr))

(0: 47[4: 8])

Not 0 to 10

return back() = 0  
 if c > len(arr)  
 c = len(arr)  
 for i in range(0, len(arr))  
 for j in range(i+1, len(arr))

def append(right, 0-1)  
 def append(left, 1)

for left right in pair:

for pair in pairs:

for a in pairs for b

right-1

left+1

right-1

left+1

right, left

1-0 1-1

David

- needs stakeholder engagement