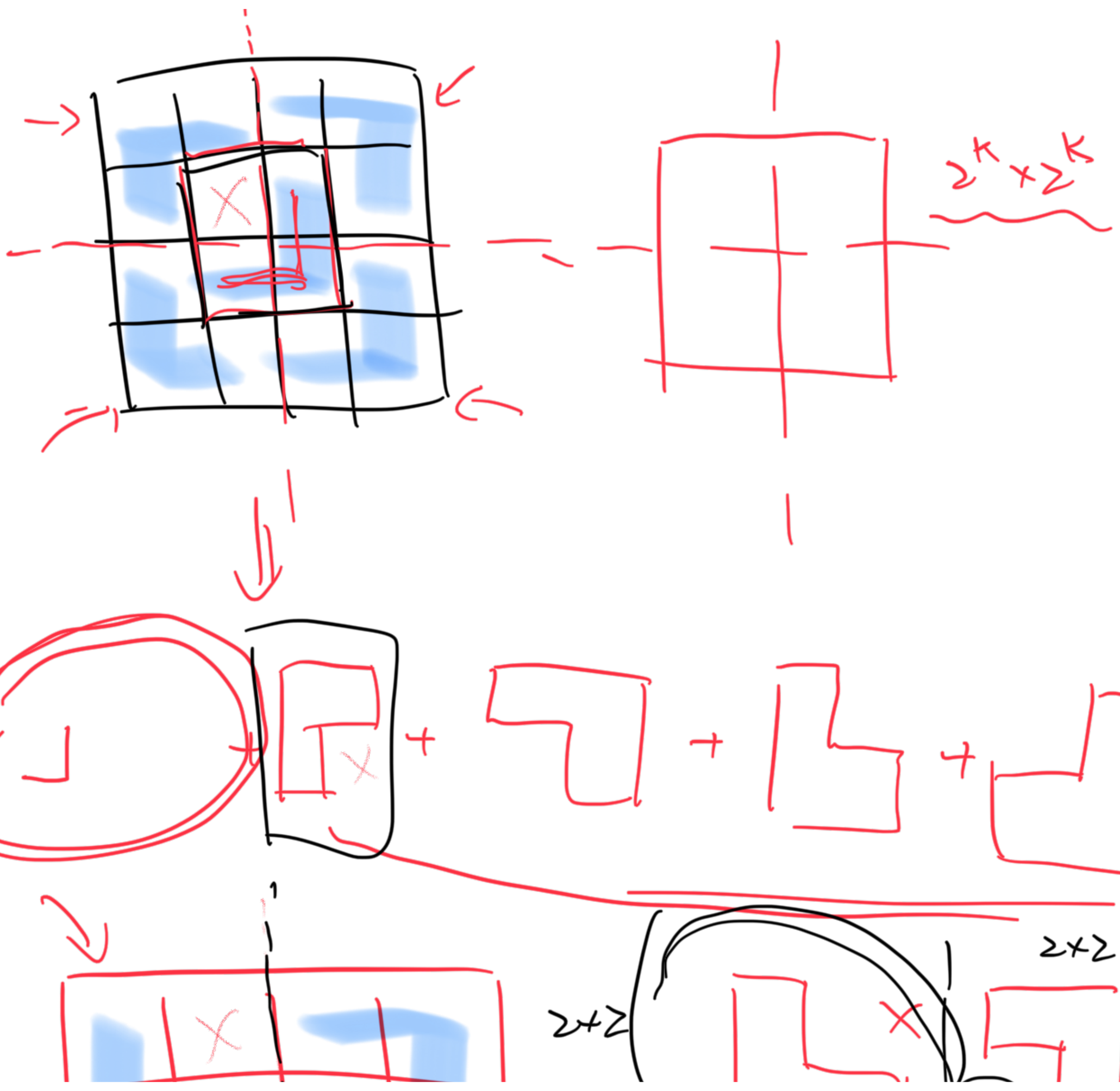
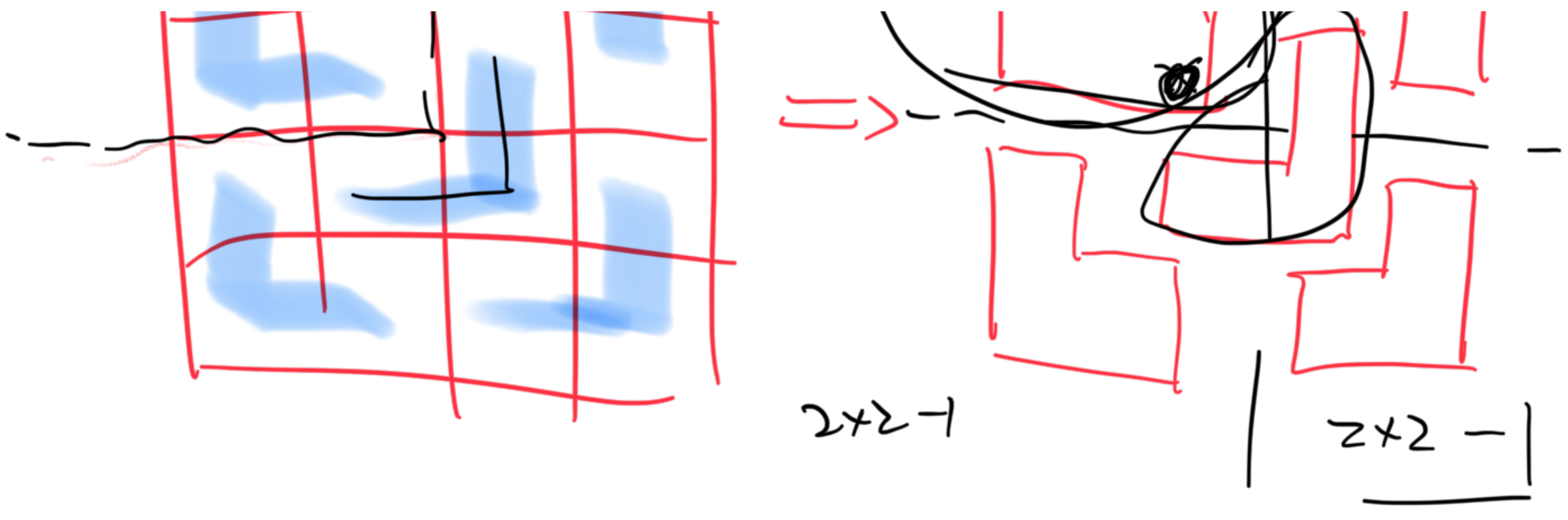

$2^k \times 2^k$
2×2
2×2−1



$4\times4 = 2\times2 +$  $+ 3\times(2\times2-1)$

$8\times8 = 4\times4 +$  $+ 3\times(4\times4-1)$

$\Downarrow$

$2^k\times2^k = 2^{k-1}\times2^{k-1} +$  $+ 3\times(2^{k-1}\times2^{k-1}-1)$

公式所在的格子

1000 = 1024

2

4B x2000x2000

4B x 1024x1024

2000x2000

16 MB

4MB x 16x16

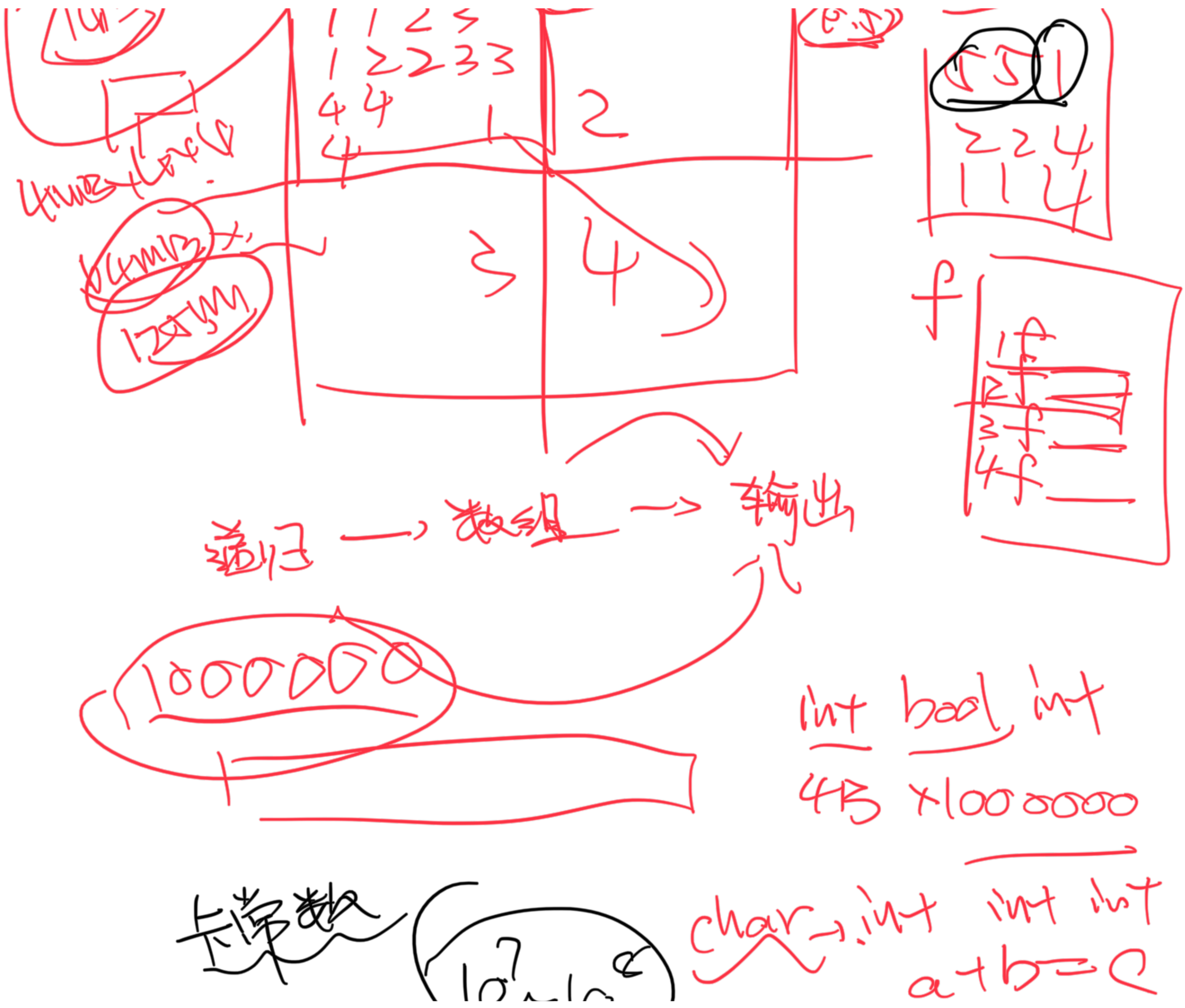
1000x1000

1 ≤ k ≤ 10

11

13

14


递归 → 数组 → 输出
1000000
int bool int
4B ×10000000
char → int int int
a+b=c

$O(n^2)$

for ——

for ——.

0.2S

(1,1)

$(1+0, 1+2^{k-1})$

(1,1)

$(1, 2^{k-1}+1)$

$n=2^k$

2^k

2^k+2

2^{k-1}

$2^{k-1}+2$

$(2^{k-1}+1, 1)$

$(2^{k-1}+1, 2^{k-1}+1)$

X

X

(x,y)

$(x+x_0, y+y_0)$

1.2S

1S

f

if (

f ——

f ——

f ——

f ——

else if

2^k

2^{k-1}

2^{k-2}

else if

1

1

else

x_1, y_1, x_2, y_2, n

$\frac{n}{2}$

(x_1, y_1)

(x_2, y_2)

n

f

$\frac{n}{2}$

x_2, y_2 $(1 \sim \frac{n}{2})$ $\frac{n}{2}+1, n$

$\frac{n}{2}$

$\frac{n}{2}$

if($x_2 <= \frac{n}{2}$)

if($y_2 <= \frac{n}{2}$)

① ② ③ ④

1 2 3 4

$\frac{n}{2}+1, \frac{n}{2}+1$

else

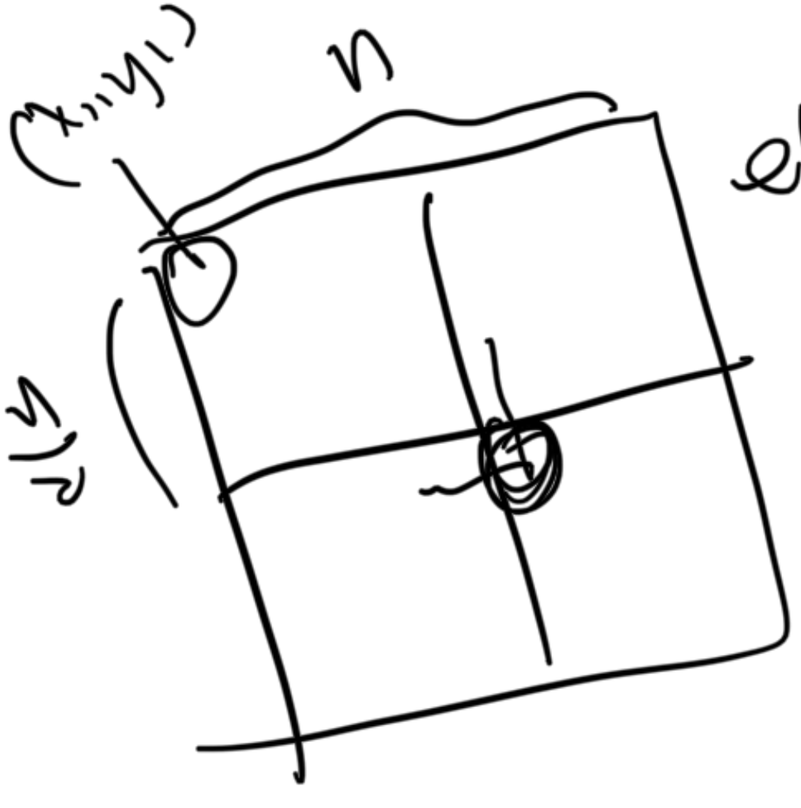
if($y_2 <= \frac{n}{2}$)

cout << _ << " " << _ << " " << _ << endl;

$f(x_1, y_1, x_2, y_2, n/2)$

$f(x_1, y_1+\frac{n}{2}, \frac{n}{2}, 1, n/2)$

$f(x_1+\frac{n}{2}, y_1, 1, \frac{n}{2}, n/2)$



else

③

$T(x+\frac{n}{2}, y+\frac{n}{2}, l, l, n/2)$

④