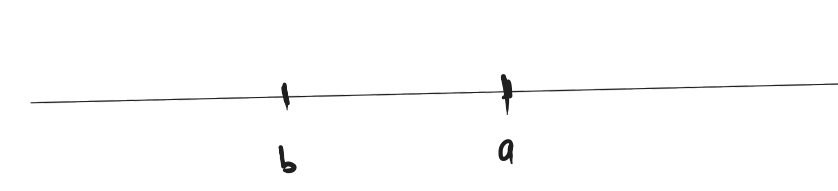


2nd y = Remainder when x is divided by y

33 % 4 = 1
25 % 3 = 2

num % 5 = 0?

$\sum_{i=0}^n i \cdot 5 = 0$ num % 5 = 0
0, 5, 10, 15, ...



WAP to print multiplication table of a number

N=5
1+2+3+4+5

$$= \frac{5(1+5)}{2}$$

$$= \frac{5 \cdot 10}{2}$$

$$= 5 \cdot 5 = 25$$

$$S_n = \frac{n(n+1)}{2}$$

N = no. of element
a: 1st element
z: last element

$$\frac{2}{2} (1+5)$$

$$= 4$$

$$\frac{N}{2}$$

$$1+3+5+\dots+(2n-1)$$

$$= \frac{N}{2} (2n+1)$$

$$= \frac{N}{2} \cdot 2N = N^2$$

$$1+2+3+\dots+1000$$

$$S_1 = 1+2+3+\dots+1000 \text{ --- (1)}$$

$$S_2 = 1000+999+\dots+1 \text{ --- (2)}$$

$$S_1 + S_2 = 1000 \cdot 1001$$

$$2S = 1000 \cdot 1001$$

$$N = 5 \cdot 10 \cdot 1001$$

$$2 \cdot 1 = 2 \cdot 5 \cdot 1 = 10$$

$$2S = N \cdot (n+1)$$

$$S = \frac{N \cdot (n+1)}{2}$$

$$2 + (1+10+19)$$

$$= \frac{4}{2} (2+10)$$

$$1+3+5+\dots+(2n-1) = \frac{N}{2} (1+2n-1)$$

$$= \frac{N}{2} \cdot 16$$

$$= 32$$

$$\frac{N}{2} \cdot 2N = N^2$$

nth even element

E → 2, 4, 6, 8, 10, ...
O → 1, 3, 5, 7, 9, ...

$$7^{th} \text{ even} = 14 \quad (2 \times 7)$$

$$12^{th} \text{ even} = 24 \quad (2 \times 12)$$

$$n^{th} \text{ even} = 2n$$

$$\frac{2n-1}{2}$$

num

odd

no.

- 36
- 1
- 1 × 36
- 2 × 18
- 3 × 12
- 4 × 9
- 6 × 6
- 9 × 4
- 12 × 3
- 18 × 2
- 36 × 1

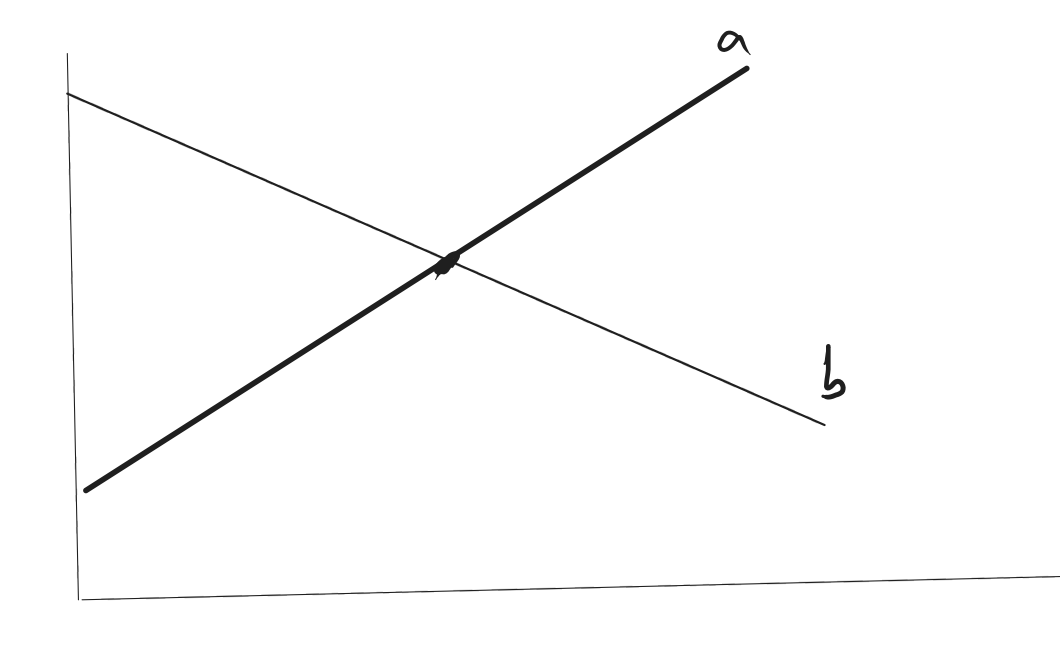
a² × b²

$$a = b = k$$

$$k \times k = 36$$

$$k^2 = 36$$

$$k = \sqrt{36}$$

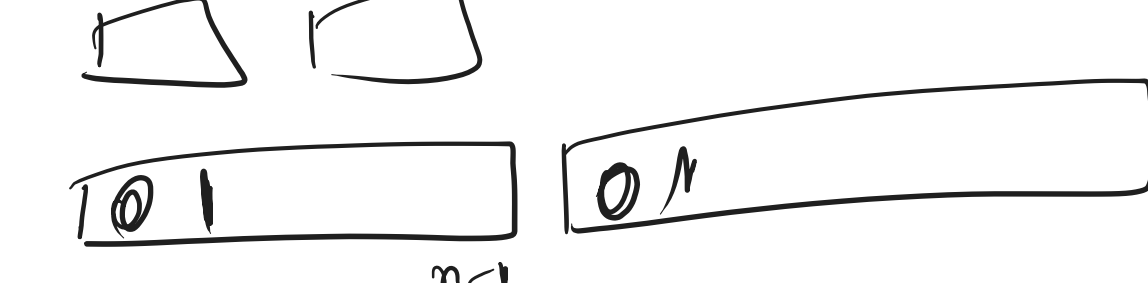


$$i \leq \sqrt{n}$$

$$i^2 \leq n$$

nums = [2, 4, 3]

ans = [2, 4, 3, 2, 4, 3]



for i = 0 to n-1

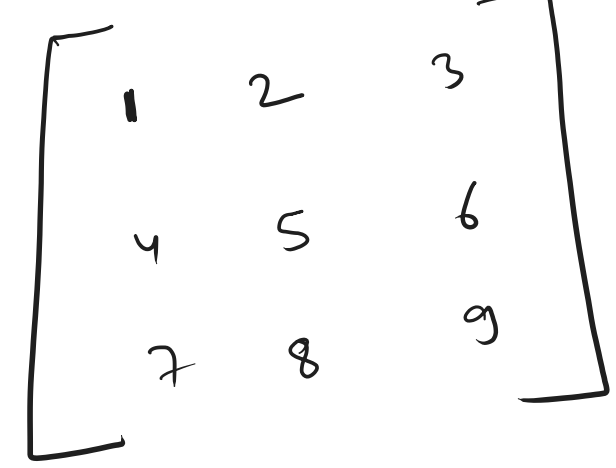
ans[i] = nums[i]

ans[n] = nums[i]

$$2 \times 0, 3$$

$$4 \times 1, 4$$

$$3 \times 2, 5$$



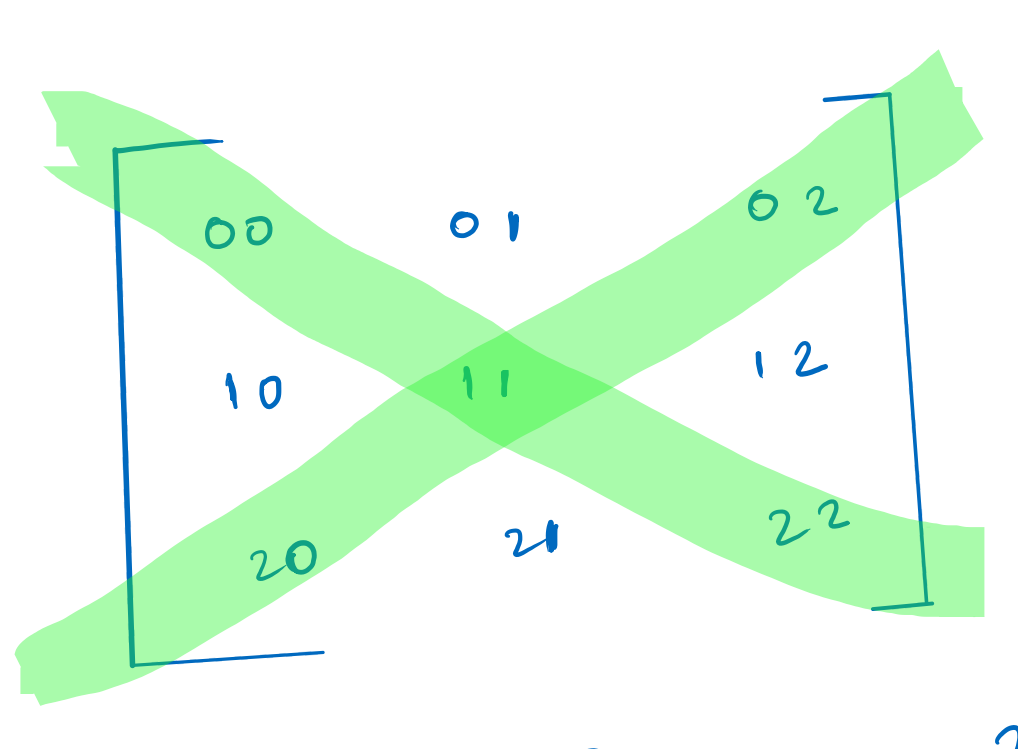
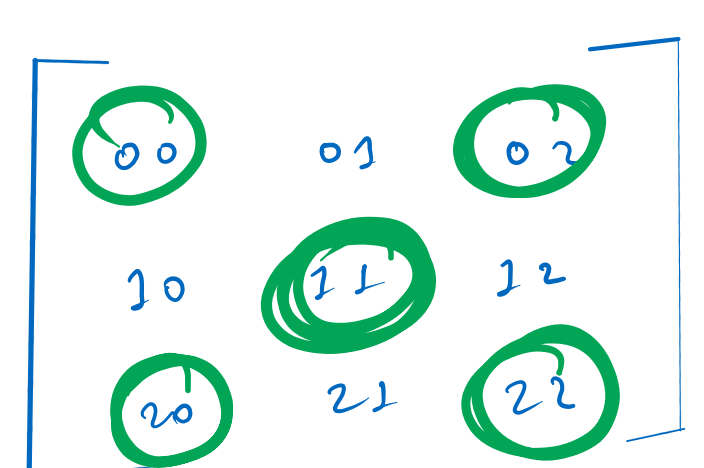
$$1+5+9+3+7 = 25$$

3 × 3

$$i+j = n-1$$

arr = [2, 4, 3, 1, 0, 9]

rSum = [2, 6, 8, 10, 10, 19]



$$i+j = n-1$$

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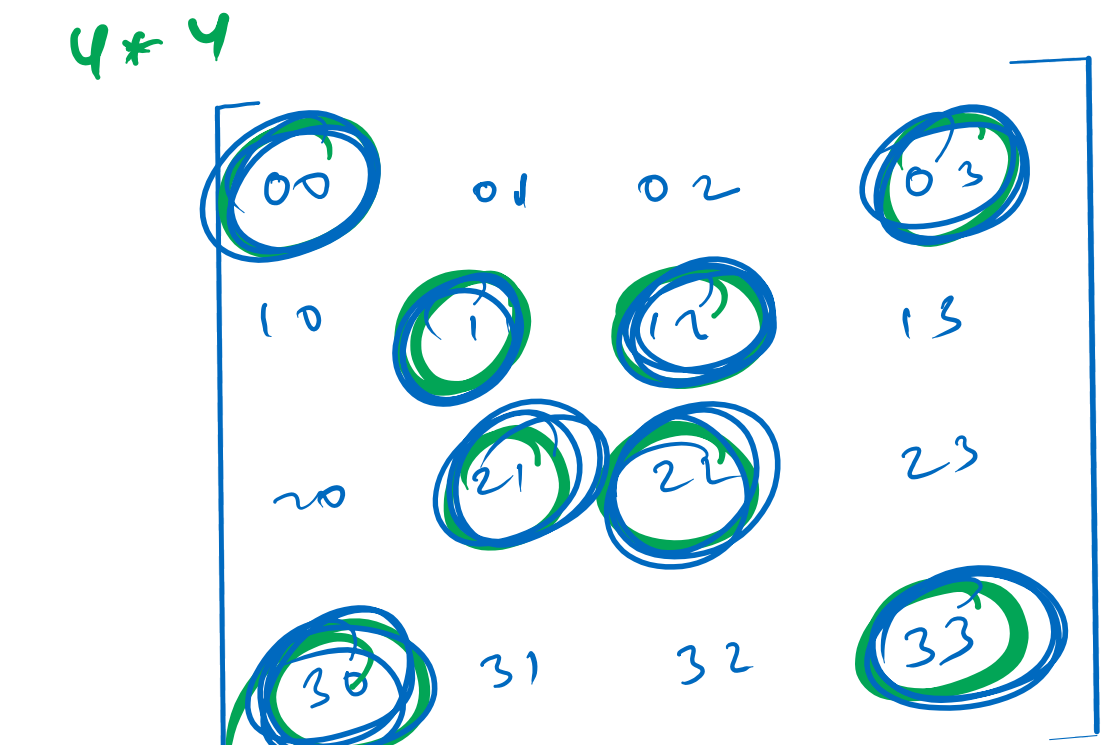
$$i+j = n-1$$

$$i+j = n-1$$

$$i+j = n-1$$

$$i+j = n-1$$

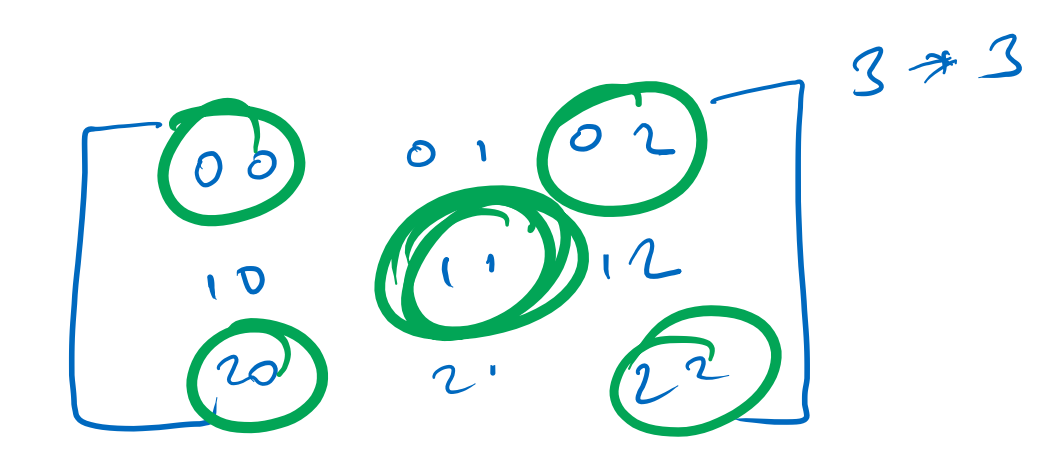
- i=0 → 0, 3
- 1 → 1, 2
- 2 → 2, 1
- 3 → 3, 0



i, n-i-1

$$[n][i] + [i][n-i-1]$$

- i=0 → [0][0] + [0][3]
- 1 → [1][1] + [1][2]
- 2 → [2][2] + [2][1]
- 3 → [3][3] + [3][0]



- i=0 → [0][0] + [0][2]
- 1 → [1][1] + [1][1]
- 2 → [2][2] + [2][0]

	B1	B2	B3	B4	
F1	2	3	1	4	= 10
F2	3	0	5	3	= 9
F3	10	0	0	10	= 20

Ans.