



HPC³ 2024

Problem 0, English

A + B

Alice and Bob have two non-negative integers A and B .
To celebrate the 4th of July, Alice and Bob have decided to combine A and B in interesting ways!

Subproblem 1

Alice and Bob have decided to start by finding the total of their integers.

Given A and B ($0 \leq A \leq 10^5$, $0 \leq B \leq 10^5$), compute and return a single value: The sum of A and B .

Input format

The first and only line of each input contains 2 integers A and B .

```
A B
```

Output format

The first and only line of each output contains 1 integer S .

```
S
```

Where S is the sum of A and B .

Example Test Cases

Input 1

```
1 1
```

Output 1

```
2
```

$1 + 1 = 2$. So, the program should return 2.

Input 2

```
1234 4321
```

Output 2

```
5555
```

$1234 + 4321 = 5555$. So, the program should return 5555.

Input 3

```
15 0
```

Output 3

```
15
```

$15 + 0 = 15$. So, the program should return 15.

Subproblem 2

Alice and Bob will now find the product of their integers.

Given A and B ($0 \leq A \leq 10^3$, $0 \leq B \leq 10^3$), compute and return a single value: The product of A and B .

Input format

The first and only line of each input contains 2 integers A and B .

```
A B
```

Output format

The first and only line of each output contains 1 integer P .

```
P
```

Where P is the product of A and B .

Example Test Cases

Input 1

1 1

Output 1

1

$1 \cdot 1 = 1$. So, the program should return 1.

Input 2

123 432

Output 2

53136

$123 \cdot 432 = 53136$. So, the program should return 53136.

Input 3

1000 0

Output 3

0

$1000 \cdot 0 = 0$. So, the program should return 0.

Subproblem 3

As a final gift to end the festivities, Alice will raise her number to the power of Bob's. In other words, A^B .

Given A and B ($0 \leq A \leq 10$, $0 \leq B \leq 10$), compute and return a single value:
The value of A raised to the power of B , A^B .

Input format

The first and only line of each input contains 2 integers A and B .

```
A B
```

Output format

The first and only line of each output contains 1 integer E .

```
E
```

Where E is A raised to the power of B .

Example Test Cases

Input 1

```
1 1
```

Output 1

```
1
```

$1^1 = 1$. So, the program should return 1.

Input 2

```
5 4
```

Output 2

```
625
```

$5^4 = 625$. So, the program should return 625.

Input 3

```
10 0
```

Output 3

```
1
```

$10^0 = 1$. So, the program should return 1