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**Parentheses and brackets****P36384\_en**

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Suppose that you have  $x$  pairs of parentheses and  $y$  pairs of brackets. In how many ways can you correctly put the parentheses and brackets?

For example, there are 15 ways with  $x = 2$  and  $y = 1$ :

( ) ( ) [ ]	( ) [ ( ) ]	( ( ) [ ] )	( [ ( ) ] )	[ ( ) ] ( )
( ) ( [ ] )	( ( ) ) [ ]	( ( [ ] ) )	[ ] ( ) ( )	[ ( ) ( ) ]
( ) [ ] ( )	( [ ] ) ( )	( [ ] ( ) )	[ ] ( ( ) )	[ ( ( ) ) ]

The number of combinations grows very fast with  $x$  and  $y$ . Therefore, make the calculations modulo a given natural number  $m$ .

**Input**

Input consists of several cases. Every case has  $x$ ,  $y$  and  $m$ . Suppose  $0 \leq x \leq 50$ ,  $0 \leq y \leq 50$ , and  $2 \leq m \leq 10^8$ .

**Output**

For every case, print the number of correct ways to place  $x$  pairs of parentheses and  $y$  pairs of brackets, modulo  $m$ .

**Sample input 1**

```
2 1 1000000
1 2 1000000
1 2 4
0 0 1000000
1 0 1000000
2 0 1000000
3 0 1000000
6 6 100000000
6 6 1000
50 50 100000000
```

**Sample output 1**

```
15
15
3
1
1
2
5
92203088
88
24825920
```

**Problem information**

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