

At the annual meeting of Board of Directors of Acme Inc. If everyone attending shakes hands exactly one time with every other attendee, how many handshakes are there?

Example

$n = 3$

There are **3** attendees, *p1*, *p2* and *p3*. *p1* shakes hands with *p2* and *p3*, and *p2* shakes hands with *p3*. Now they have all shaken hands after **3** handshakes.

Function Description

Complete the *handshakes* function in the editor below.

handshakes has the following parameter:

- *int n*: the number of attendees

Returns

- *int*: the number of handshakes

Input Format

The first line contains the number of test cases *t*.
Each of the following *t* lines contains an integer, *n*.

Constraints

$1 \leq t \leq 1000$
 $0 < n < 10^6$

Sample Input

```
2
1
2
```

Sample Output

```
0
1
```

Explanation

Case 1 : The lonely board member shakes no hands, hence 0.
Case 2 : There are 2 board members, so 1 handshake takes place.