Here is a pretty problem which has been the source of much confusion in the past due to unfortunate misunderstandings while defning its terms.

The ancient version which appears in old mathematical works goes something like this: A courier starting from the rear of a moving army, ffty miles long, dashes forward and delivers a dispatch to the front and returns to his position in the rear, during the exact time it required the entire army to advance just ffty miles. How far did the courier have to travel in delivering the dispatch, and returning to the rear of the army?

The courier galloping around the army

Now, for the general problem: Consider an army L miles long, marching forward at constant speed. A courier starts from the rear of the army, travels all the way to the front, and immediately goes back to the rear of the army, reaching his fnal destination at the precise moment when the army has covered a distance of exactly L miles. Assume that the courier also moves with constant speed, and that the time he spends on the front delivering the dispatch is negligible.

Write a program that, given the value L, calculates the total distance traveled by the courier, in miles.

Input

Input starts with a positive integer T, that denotes the number of test cases.

Each test case is described by a single integer L, in its own line.

$T \leq 3000$; $1 \leq L \leq 10^5$

Output

For each test case, print the case number, followed by the total distance covered by the courier. Print this result as a real number, with exactly two digits after the decimal point.

Sample Input

```
1
50
```

Sample Output

```
Case 1: 120.71
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