

# Evaluating $e^x$

The series expansion of  $e^x$  is given by:

$$1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \dots$$

Evaluate  $e^x$  for given values of  $x$  by using the above expansion *for the first 10 terms*.

## Input Format

The first line contains an integer  $N$ , the number of test cases.

$N$  lines follow. Each line contains a value of  $x$  for which you need to output the value of  $e^x$  using the above series expansion. These input values have exactly 4 decimal places each.

## Output Format

Output  $N$  lines, each containing the value of  $e^x$ , computed by your program.

## Constraints

$$1 \leq N \leq 50$$

$$-20.00 \leq x \leq 20.00$$

*Var*, *Val* in Scala and *def* and *defn* in Clojure are blocked keywords. The challenge is to accomplish this without either mutable state or direct declaration of local variables.

## Sample Input

```
4
20.0000
5.0000
0.5000
-0.5000
```

## Sample Output

```
2423600.1887
143.6895
1.6487
0.6065
```

## Explanation

The output has the computed values of  $e^x$  corresponding to each test case. They are correct up to 4 decimal places and on separate lines.

## Scoring

All test cases carry an equal weight in the final score. For your solution to pass a given test case, all the values of  $e^x$  computed by you must be within  $\pm 0.1$  of the expected answers. This tolerance level has been kept to account for slightly different answers across different languages.