Sine P37619_en

Write a program that reads angles in degrees and writes their sine. In order to solve this problem, you are requested to use the following Taylor series:

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots .$$

Input

Input consists of angles in degrees in the $[-180, 180]$ interval.

Output

For each given angle, print its sine in a line.

Observation

The checker of this problem tolerates absolute errors up to 0.001.

Sample input

```
0
-180
180
45
60
-60
12.123
12.123001
```

Sample output

```
0
-2.3521e-16
2.3521e-16
0.707107
0.866025
-0.866025
0.210011
0.210011
```

Problem information

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