

2083 *u* Calculate e

A simple mathematical formula for e is

$$e = \sum_{i=0}^n \frac{1}{i!}$$

where n is allowed to go to infinity. This can actually yield very accurate approximations of e using relatively small values of n .

Input

There is no input file for this problem.

Output

Output the approximations of e generated by the above formula for the values of n from 0 to 9. The beginning of your output should appear as in the sample output below.

Sample Input

There is no sample input for this problem.

Sample Output

```
n e
- -----
0 1
1 2
2 2.5
3 2.666666667
4 2.708333333
```