DWITE '09 R6 #2 - Round to power of two

Time limit: 2.0s **Memory limit:** 64M

DWITE Online Computer Programming Contest, April 2010, Problem 2

Yet another "*round to arbitrary sequence*" question — **powers of 2**. Given a non-negative integer, what is the closest integer that is also an integer power of 2? This one actually might have some potential application, as integer powers of 2 are represented by a single bit in a digital sequence — numbers that are the easiest to work with in digital circuits, so we might want to approximate some numbers to work with "easier" numbers instead.

The input will contain 5 lines, integers $0 \leq N \leq 65\,536$.

The output will contain 5 lines, corresponding integers rounded to the closest integer power of 2. If there are two integers equally far away, then use the higher value for the answer.

The sequence starts as: $1, 2, 4, 8, 16, 32, \ldots, 2^n$.

Sample Input

```
0
1
2
3
5
```

Sample Output

```
1
1
2
4
4
```

Problem Resource: DWITE