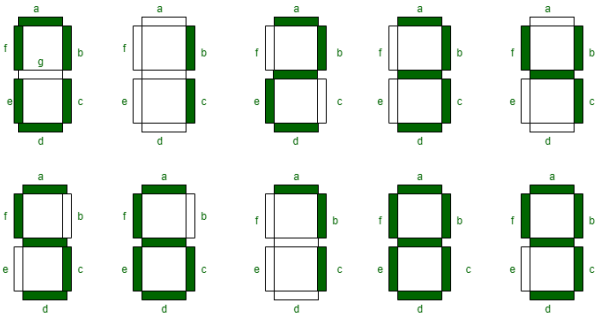
Interpreting Indicated Integers

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	1024 mebibytes

The display of a pocket device consists of several seven-segment indicators arranged in a row. Each indicator displays a decimal digit:



Unused digits on the left are displayed as zeros, meaning that all indicators are always used.

The device can be taken out of the pocket in the correct orientation or rotated 180 degrees. The probability of each of these events is 50 percent. In some cases, the value is interpreted uniquely even after rotating (for example, rotating 73 results in a display that is not a valid number, so we can restore the orientation, and for 22 the value is the same regardless of the orientation), but in some other cases, there may be two possible interpretations (for example, 92 or 26).

Given the number of the indicators on the display, find the probability that the displayed value **cannot** be interpreted uniquely (considering that all values on the indicator are equiprobable).

Input

The input contains the single integer n ($1 \le n \le 24$).

Output

Output a single real number — the probability that the displayed value cannot be interpreted uniquely. The value shall be **absolutely** precise and shall be printed **without extra leading or trailing zeroes**.

Example

standard input	*standard output*
2	0.3