Probability Game

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

The Programming Police have left N gold coins to distract the Cyber Criminals as they try to break into their top-secret lair. The two criminals, Mal and Ware, decide to split the treasure by playing a game of Cyber Trivia, with N questions total. Whenever someone wins a round, he gets a gold coin. Mal has a K percent chance, where K is an integer between 0 and 100, of winning the first round. When Mal or Ware win a round, their probability of winning the next round is halved and rounded down to the nearest integer, and the other person's winning percentage absorbs whatever the first person lost. At the end of the N rounds, what is the expected number of coins that Mal has? Output your answer times 1000 (and truncate it to the nearest integer).

Input

Line 1: Two space separated integers, N and K

Output

Line 1: Number of games Mal is expected to win times 1000

Example

standard input	standard output
10 40	4900

Note

$1 \leq N \leq 100,000$
$0 \leq K \leq 100$