Problem B: Cow IDs

Being a secret computer geek, Farmer John labels all of his cows with binary numbers. However, he is a bit superstitious, and only labels cows with binary numbers that have exactly $K$ "1" bits ($1 \leq K \leq 10$). The leading bit of each label is always a "1" bit, of course. FJ assigns labels in increasing numeric order, starting from the smallest possible valid label -- a $K$-bit number consisting of all "1" bits. Unfortunately, he loses track of his labeling and needs your help: please determine the Nth label he should assign ($1 \leq N \leq 10^7$).

INPUT FORMAT:

* Line 1: Two space-separated integers, $N$ and $K$.

SAMPLE INPUT:

7 3

INPUT DETAILS:

Among all binary numbers containing exactly 3 "1" bits, FJ wants to output the 7th in increasing sorted order.

SAMPLE OUTPUT:

10110