Problem J. Rivals

Input file:	standard input
Output file:	standard output
Time limit:	4 seconds
Memory limit:	1024 megabytes

You are playing a game. There are n enemies in this game. The health point of the i-th enemy is a_i, and the first c enemies are "key" enemies.

There are k rounds in the game. In each round, let S be the enemies with health point a_i greater than 0 (i.e. $S = \{i | 1 \le i \le n \wedge a_i > 0\}$), and you will choose one enemy from the set S with the same probability (i.e. for each i in S, you will choose it with probability $\frac{1}{|S|}$) and decrease its health point by 1 (i.e. let a_i be $a_i - 1$).

If after k rounds, the health point of every "key" enemy has been decreased to 0, you win the game; otherwise, you lose the game.

Now for each k such that $1 \le k \le \sum_{i=1}^{n} a_i$, you need to count the probability of winning the game after k rounds. You only need to output the answer modulo 998 244 353.

Input

The first line contains two integers n, c ($1 \le c \le n \le 30$) — the number of enemies and "key" enemies.

The second line contains n integers, the i-th integer of which is a_i ($1 \le a_i \le 10$) — the health point of the i-th enemy in the beginning.

Output

The output contains $\sum_{i=1}^{n} a_i$ integers. The k-th integer represents the probability of winning the game after k rounds modulo 998 244 353.

Examples

standard input	standard output
5 3 1 1 1 1 1	0 0 299473306 199648871 1
8 5 3 5 3 2 2 5 4 4	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 851829480 293319617 60309444