1004 XXXX

Problem Description

Serika Abydos Countermeasure Committee Nonomi Ayane Shiroko Hoshino imes imes imes imes S|S| S iShiroko Hoshino i1 x = yyShiroko Ayane Nonomi Ayane N Nonomi RS $N \qquad S \cap R = \varnothing$ 1 Shiroko Hoshino Shiroko Hoshino 1000000007

Input

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$$T 1 \leq T \leq 20$$

$$n \ 1 \le n \le 18$$
 N

$$n \qquad p_1, p_2, p_3, \cdots, p_n \ \ 2 \leq p_1 < p_2 < p_3 < \cdots < p_n \leq 10^7$$
 N

$$m \ 0 \leq m \leq 2^n$$
 R

$$m \qquad a_1, a_2, a_3, \cdots, a_m \ \ 0 \leq a_1 < a_2 < a_3 < \cdots < a_m < 2^n$$
 R

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$$N \hspace{1cm} R \hspace{1cm} x_i \hspace{1cm} 1 \leq i \leq m$$

$$N=\prod_{j=1}^n p_j$$

$$x_i = \prod_{j=1}^n p_j^{[(a_i ext{ bitand } 2^{j-1})>0]}$$

[P] = 0

$$[P]$$
 P $[P]=1$

Output

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1000000007

Sample Input

2

5

2 5 7 13 19

0

9

2 3 5 7 11 13 17 19 23

Sample Output

Hint

Hoshino
$$S$$
 $S=\{17290\}$ 51 S Shiroko

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