

ECOO '16 R1 P2 - Spindie

In the game of **Spindie**, players take turns spinning a spinner and rolling a die.

On each turn, they spin the spinner three times and roll the die between each pair of spins (i.e. the sequence on a single turn is: **Spin, Roll, Spin, Roll, Spin**). Each spin of the spinner lands on some integer and each roll of the die results in an integer from **1** to **6**. The first spinner number is the base score. Then if a die roll is **1** through **5**, the player adds the next spinner number to their score. If they roll a **6**, the next number is used to multiply their score. The winner is the player with the highest score after a set number of rounds.

Here are some example turns of Spindie:

Spin	Roll	Spin	Roll	Spin	Score
10	4	7	1	8	$(10 + 7) + 8 = 25$
1	3	2	6	5	$(1 + 2) \times 5 = 15$
6	6	6	6	6	$(6 \times 6) \times 6 = 216$

The input will contain **10** test cases.

The first line of each test case will consist of an integer N representing the number of integers on the spinner, where $1 \leq N \leq 5000$.

The next line contains the N integers on the spinner, S_1 through S_N , separated by spaces, where $1 \leq S_i \leq 100$.

The next line will contain five target integers T_1 through T_5 separated by spaces, where $1 \leq T_i \leq 10^6$.

For each test case, your program should output a single line consisting of **5** letters. Each letter should represent one of the five targets (in order). If the target represents a possible score in a single round of Spindie, then output a **T**. If it is not possible, output an **F**.

Note that the sample data below contains only **5** test cases, but the test data will contain **10**.

Sample Input

```
5
23 74 7 64 47
128605 205 2162 2709 71346
3
26 5 11
407 962 455 21 902
4
23 75 89 24
933 484 13248 102 44640
9
23 61 77 83 12 92 1 7 65
72900 144 5704 145 6370
7
87 20 94 99 14 26 87
241956 177 749331 221 4066
```

Sample Output

```
FFTFF
TTFTF
FFTFF
FTTTF
TFTFF
```