CCO '05 P4 - Primed Sequences

Time limit: 4.0s **Memory limit:** 16M

Canadian Computing Competition: 2005 Stage 2, Day 2, Problem 1

Given a sequence of positive integers of length n, we define a primed subsequence as a consecutive subsequence of length at least two that sums to a prime number greater than or equal to two.

For example, given the sequence:

```
3 5 6 3 8
```

There are two primed subsequences of length 2 ($5 + 6 = 11$ and $3 + 8 = 11$), one primed subsequence of length 3 ($6 + 3 + 8 = 17$), and one primed subsequence of length 4 ($3 + 5 + 6 + 3 = 17$).

Input Specification

Input consists of a series of test cases. The first line consists of an integer t $(1 \leq t \leq 20)$, the number of test cases.

Each test case consists of one line. The line begins with the integer n, $0 < n \leq 10\,000$, followed by n positive numbers less than or equal to $10\,000$ comprising the sequence.

You should note that in test cases worth 80% of the points, there will be at most $1\,000$ numbers in the sequence.

Output Specification

For each sequence, print `Shortest primed subsequence is length x:`, where x is the length of the shortest primed subsequence, followed by the shortest primed subsequence, separated by spaces. If there are multiple such sequences, print the one that occurs first. If there are no such sequences, print `This sequence is anti-primed.`.

Sample Input

```
3
5 3 5 6 3 8
5 6 4 5 4 12
21 15 17 16 32 28 22 26 30 34 29 31 20 24 18 33 35 25 27 23 19 21
```

Sample Output

```
Shortest primed subsequence is length 2: 5 6
Shortest primed subsequence is length 3: 4 5 4
This sequence is anti-primed.
```