Problem E

Special equations

Description

Let $f(x) = a_n x^n + ... + a_1 x + a_0$, in which a_i ($0 <= i <= n$) are all known integers. We call $f(x) \equiv 0 \pmod{m}$ congruence equation. If m is a composite, we can factor m into powers of primes and solve every such single equation after which we merge them using the Chinese Reminder Theorem. In this problem, you are asked to solve a much simpler version of such equations, with m to be prime's square.

Input

The first line is the number of equations T, $T<=50$.

Then comes T lines, each line starts with an integer deg ($1<=deg<=4$), meaning that f(x)'s degree is deg. Then follows deg integers, representing a_n to a_0 ($0 < abs(a_n) <= 100$; $abs(a_i) <= 10000$ when $deg >= 3$, otherwise $abs(a_i) <= 100000000$, $i<n$). The last integer is prime pri ($pri<=10000$).

Remember, your task is to solve $f(x) \equiv 0 \pmod{pri*pri}$

Output

For each equation $f(x) \equiv 0 \pmod{pri*pri}$, first output the case number, then output anyone of x if there are many x fitting the equation, else output "No solution!"

Sample Input

```
4
2 1 1 -5 7
1 5 -2995 9929
2 1 -96255532 8930 9811
4 14 5458 7754 4946 -2210 9601
```

Sample Output

```
Case #1: No solution!
Case #2: 599
Case #3: 96255626
Case #4: No solution!
```