

Starving, Jimmy went to the cupboard to see what he could make for lunch. Unfortunately for him, the only food item inside was an old can of beans. Under normal circumstances, he wouldn't think about it, but the old, beaten up appearance of the can worried him. "How long has this been in here?", he wondered out loud.

Turning the can over, he saw three cryptic numbers stamped into the bottom: 09 06 03

Quickly realizing it was the best before date, he heaved a sigh of relief: the can was still good for another 4 years or so...if the first number was a year. Suddenly realizing the "09" could be the day and not the year, he wasn't so sure anymore. In fact, if the last number (the "03") was the year, then the can could have gone bad 2 years before! (This Jimmy lives in the year 2005).

You have to help out Jimmy! Given the century that Jimmy lives in and the three numbers on the bottom of the can, print out the earliest valid date the can could have gone bad.



Input

The first line will contain an integer t which is the number of test cases to follow. Each test case consists of four integers, c, x, y, z on a line by themselves. $c+1$ is the century that Jimmy lives in, and is in the range $0 \leq c < 2^{30}$. x, y, z are the possible day, month, and year in the century but in an unknown order. All are in the range $0 \leq x, y, z < 100$

Recall we want the earliest VALID date, so don't forget about leap years! Here are a few facts you can use about leap years:

- the year 0 is a leap year;
- every fourth year after 0 is a leap year, but
- every hundred year is NOT a leap year, but
- every four hundred year IS a leap year.

This isn't exactly true in our world, but Jimmy lives on a different planet in a different galaxy. Strangely enough, they use a calendar system astonishingly like our own, speak English, and also eat beans packaged in cans!

Jimmy's calendar, like ours, has the months January through December, numbered 01 through 12. Each of Jimmy's months contain the same number of days as our months on the standard, Gregorian calendar. The days within months are numbered from 01 to 31, and no month has more than 31 days. On a leap year, Jimmy's Februaries also have 29 days instead of 28.

Output

The output will contain the integers in the order " $YY MM DD$ " of the earliest possible date at which the can of beans could have gone bad. If there is no valid date, print "-1". Each test case should be written on a line by itself.

Sample Input

```
2
20 9 6 3
13244324 99 99 99
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Sample Output

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03 06 09
-1
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