

Gregorian calendar

[Wersja polska](#)

[English version](#)

Given a date, your task is to print the weekday.

Notice: In Julian calendar leap years were years which were divisible by 4. According to Gregorian calendar, leap years are years which are divisible by 4 excluding these which are divisible by 100 and are not divisible by 400.

Input

The first line of the standard input contains one integer t ($t < 101$) which is the number of test cases.

In each of the next t lines there is a date in format yyyy:mm:dd ($1582 < \text{year} < 2010$).

Output

For each test case print weekday (*Monday, Tuesday, Wednesday, Thursday, Friday, Saturday or Sunday*) for given date or *ERROR* if the date is incorrect.

Example

Input:

2
1959:10:10
1962:02:29

Output:

Saturday
ERROR

Special thanks to Rafał Spręga for the concept of this task.