

# Easter festival date

A friend of mine has lost his cellular phone, and so his calendar.

Help him find the easter festival date of the year Y. ( $1584 < Y < 16000$ )

## Input

N lines.

Each line of the input contains Y  
The last line ends with EOF.

## Output

Output consist of exactly N lines.

The format of one line of output is: "Y: D M"

where D,M=Date and Month in the Gregorian calendar.

## Example

**Input:**

2012

**Output:**

2012: 8 April