Seconds Apart

You will be given time duration in seconds, you have to convert it into years, months, days, hours, minutes and seconds.

You can assume that, 1 year = 12 months, 1 month = 30 days, 1 day = 24 hours, 1 hour = 60 minutes and 1 minute = 60 seconds.

Input

The first line contains the number of test cases T (T \leq 50). Then T lines follow, each containing a positive integer S, the number of seconds (1 \leq S \leq 10^9).



Output

For each test case print the case number first as shown in sample input/output section. Then you have to print the number of years, months, days, hours, minutes and seconds in this order. If any of these terms is 0, do not print it, if any of these term has a magnitude > 1, print the unit in plural form, otherwise, print it in singular form. For example, there must not be any term as 0 minutes; you must skip the minute part for such situations. Also, for a year value 1, you have to print 1 year, not 1 years, and for 10 months, you have to print 10 months, not 10 month. Check sample input and output for more details.



Example

Input:

Output:

Case 1: 1 second Case 2: 59 seconds Case 3: 1 minute Case 4: 6 minutes 35 seconds Case 5: 1 month 14 days 10 hours 45 minutes 5 seconds Case 6: 1 year