

Problem D. The Clock

Time limit 1000 ms

Mem limit 262144 kB

Victor has a [24-hour clock](#) that shows the time in the format " $HH:MM$ " ($00 \leq HH \leq 23$, $00 \leq MM \leq 59$). He looks at the clock every x minutes, and the clock is currently showing time s .

How many **different** palindromes will Victor see in total after looking at the clock every x minutes, the first time being at time s ?

For example, if the clock starts out as $03:12$ and Victor looks at the clock every 360 minutes (i.e. every 6 hours), then he will see the times $03:12$, $09:12$, $15:12$, $21:12$, $03:12$, and the times will continue to repeat. Here the time $21:12$ is the only palindrome he will ever see, so the answer is 1.

A palindrome is a string that reads the same backward as forward. For example, the times $12:21$, $05:50$, $11:11$ are palindromes but $13:13$, $22:10$, $02:22$ are not.

Input

The first line of the input contains an integer t ($1 \leq t \leq 100$) — the number of test cases. The description of each test case follows.

The only line of each test case contains a string s of length 5 with the format " $HH:MM$ " where " HH " is from " 00 " to " 23 " and " MM " is from " 00 " to " 59 " (both " HH " and " MM " have exactly two digits) and an integer x ($1 \leq x \leq 1440$) — the number of minutes Victor takes to look again at the clock.

Output

For each test case, output a single integer — the number of different palindromes Victor will see if he looks at the clock every x minutes starting from time s .

Sample 1

Input	Output
6	1
03:12 360	16
00:00 1	10
13:22 2	0
15:15 10	1
11:11 1440	1
22:30 27	

Note

The first test case is explained in the statement.