Problem K. Time Zone

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

Chiaki often participates in international competitive programming contests. The time zone becomes a big problem.

Given a time in Beijing time (UTC +8), Chiaki would like to know the time in another time zone s.

Input

There are multiple test cases. The first line of input contains an integer T ($1 \le T \le 10^5$), indicating the number of test cases. For each test case:

The first line contains two integers a, b ($0 \le a \le 23, 0 \le b \le 59$) and a string s in the format of "UTC+X", "UTC-X", "UTC+X.Y", or "UTC-X.Y" ($0 \le X, X.Y \le 14$).

Output

For each test, output the time in the format of $hh : mm$ (24-hour clock).

Example

standard input	standard output
3	11:11
11 11 UTC+8	12:12
11 12 UTC+9	03:23
11 23 UTC+0	