A. Buses Between Cities

Buses run between the cities A and B, the first one is at 05:00 AM and the last one departs not later than at 11:59 PM. A bus from the city A departs every a minutes and arrives to the city B in a t_a minutes, and a bus from the city B departs every b minutes and arrives to the city A in a t_b minutes.

The driver Simion wants to make his job diverse, so he counts the buses going towards him. Simion doesn't count the buses he meet at the start and finish.

You know the time when Simion departed from the city A to the city B. Calculate the number of buses Simion will meet to be sure in his counting.

Input

The first line contains two integers a, t_a ($1 \leq a$, $t_a \leq 120$) — the frequency of the buses from the city A to the city B and the travel time. Both values are given in minutes.

The second line contains two integers b, t_b ($1 \leq b$, $t_b \leq 120$) — the frequency of the buses from the city B to the city A and the travel time. Both values are given in minutes.

The last line contains the departure time of Simion from the city A in the format `hh:mm`. It is guaranteed that there are a bus from the city A at that time. Note that the hours and the minutes are given with exactly two digits.

Output

Print the only integer z — the number of buses Simion will meet on the way. Note that you should not count the encounters in cities A and B.

Examples

input
```
10 30
10 35
05:20
```
output
```
5
```

input
```
60 120
24 100
13:00
```
output
```
9
```

Note

In the first example Simion departs form the city A at 05:20 AM and arrives to the city B at 05:50 AM. He will meet the first 5 buses from the city B that departed in the period [05:00 AM - 05:40 AM].
Also Simion will meet a bus in the city B at 05:50 AM, but he will not count it.

Also note that the first encounter will be between 05:26 AM and 05:27 AM (if we suggest that the buses are go with the sustained speed).