518 Time

Let a time point be given as 6 integers y, m, d, h, min, s where $1970 < y < 2030$, $0 < m < 13$, $0 < d < 32$, $0 \leq h < 24$, $0 \leq min < 60$, $0 \leq s < 60$. Write a program which computes how many periods of a given length fit between two given time points. A period is given by a pair consisting of a positive integer and a word expressing a time unit, i.e. `year` or `month` or `day` or `hour` or `minute` or `second`. Every 4th year is a leap year, except every 100th which is not except every 400 year which is. A length of the year varies according to leap years. The same is true for the month February. Time units always start as usual, e.g., a year starts at 1st January, a month starts at its 1st day, a day starts at 0 hours 0 minutes 0 seconds, etc. A period ends after its last second.

Input

The input file consists of blocks of lines. Each block has three lines. The first line of a block contains a time point D_1 and the second line a time point D_2. D_1 always precedes D_2. All numbers in the lines are separated by one space. You can assume that the given descriptions of time points are correct. The third line contains a time period. There is one space between the number and the word in the period definition on this line. After each block, there is one empty line.

Output

The output file contains the lines corresponding to the blocks in the input file. A line cor- responding to a block contains one integer number expressing how many specified periods are contained between the given time points.

Sample Input

```
1997 12 31 23 59 59
1998 1 1 0 0 0
1 second

2000 2 29 0 0 0
2000 2 29 23 59 59
1 day

2000 2 29 0 0 0
2000 3 1 0 0 0
24 hour

1996 12 31 20 30 0
1997 1 1 7 30 0
60 minute

1996 12 31 20 30 0
1997 1 1 7 30 0
1 hour
```

Sample Output

```
1
0
1
11
10
```