ACSL
American Computer Science League

-2014 - 2015 **Contest #1**

Navigating ACSLland
Senior Division

PROBLEM: In taking a vacation trip, MapQuest and Google Maps provide very valuable information. Newer versions of these on-line tools provide not only the distance traveled, but also how long it will take you and how much it will cost for gasoline. ACSL staff members live in different cities and have to meet for contest work sessions, so they need to know when they will meet. In this program, they will be traveling a route in a particular region of ACSLland with all destinations given in alphabetical order. The information between each pair of adjacent cities on your route is given below:

A to B - 450 miles	B to C – 140 miles	C to D – 125 miles
D to E – 365 miles	E to F – 250 miles	F to G – 160 miles
G to H – 380 miles	H to J – 235 miles	J to K – 320 miles

For example, if two staff members from cities A and C (590 miles apart) need to meet with one staff member traveling at 50 miles per hour and starting at 1 PM and the other traveling at 60 miles per hour but starting at 2:00 PM, the 2 cars will meet in 5 hours and 55 minutes or "5:55".

INPUT: There will be 5 lines of input. Each line will contain 2 letters for the two starting cities, the starting time of each traveler on the hour along with an AM or PM string, and the average speed of each traveler respectively. Input #1 below has the first traveler starting from city A at 1 PM and traveling at a speed of 50 miles per hour.

OUTPUT: For each input line, print how long it will take the first traveler to get to the meeting point. Print the answer in hours:minutes (h:mm or hh:mm) format with exactly 2 digits for the number of minutes rounded to the nearest minute. Note that the difference in times will always be the smallest difference. That is, if given 11 AM and 1 PM, in either order, the difference is 2 hours not 22 hours.

SAMPLE INPUT	SAMPLE OUTPUT
1. A, C, 1, PM, 2, PM, 50, 60	1 5:55
2. A, D, 9, AM, 1, PM, 50, 60	2. 8:41
3. B, E, 5, PM, 3 PM, 50, 60	3. 4:38
4. C, F, 11, PM, 2, AM, 50, 60	4. 8:22
5. E, K, 10, AM, 12, PM, 65, 55	5. 12:08