

## 2A

### Speed Limit

Bill and Ted are taking a road trip. But the odometer in their car is broken, so they don't know how many miles they have driven. Fortunately, Bill has a working stopwatch, so they can record their speed and the total time they have driven. Unfortunately, their record keeping strategy is a little odd, so they need help computing the total distance driven. You are to write a program to do this computation.

For example, if their log shows

| Speed in miles per hour | Total elapsed time in hours |
|-------------------------|-----------------------------|
| 20                      | 2                           |
| 30                      | 6                           |
| 10                      | 7                           |

this means they drove 2 hours at 20 miles per hour, then  $6-2=4$  hours at 30 miles per hour, then  $7-6=1$  hour at 10 miles per hour. The distance driven is then  $(2)(20) + (4)(30) + (1)(10) = 40 + 120 + 10 = 170$  miles. Note that the total elapsed time is always since the beginning of the trip, not since the previous entry in their log.

#### Input

The input consists of one or more data sets.

Each set starts with a line containing an integer  $n$ ,  $1 \leq n \leq 10$ , followed by  $n$  pairs of values, one pair per line. The first value in a pair,  $s$ , is the speed in miles per hour and the second value,  $t$ , is the total elapsed time. Both  $s$  and  $t$  are integers,  $1 \leq s \leq 90$  and  $1 \leq t \leq 12$ . The values for  $t$  are always in strictly increasing order.

A value of '-1' for  $n$  signals the end of the input.

#### Output

For each input set, print the distance driven, followed by a space, followed by the word 'miles'.

#### Sample Input

```
3
20 2
30 6
10 7
2
60 1
30 5
4
15 1
25 2
30 3
10 5
-1
```

**Sample Output**

```
170 miles
180 miles
90 miles
```