Problem 1	**Flight Times**	4 Points

Program Name: flight.cpp Input File: flight.dat

Flight times in the United States can be estimated using a formula based on the direction of travel and distance between airports. Regardless of the distance or direction, there is also a fixed amount of time for the take-off and landing cycles. Relevant data:

- It takes 0.2 hours for takeoff and climb-out from the origin airport.
- It takes 0.4 hours for approach and landing at the destination airport.
- The aircraft ground speed after climb-out when traveling west is 480 miles/hour.
- The aircraft ground speed after climb-out when traveling east is 540 miles/hour.
- The aircraft ground speed after climb-out when traveling north or south is 510 miles/hour.

Given this data, the flight time can be estimated as:
Flight_time =
0.2 hours for takeoff and climb-out +
0.4 hours for approach and landing +
distance between airports / ground speed

For example, it is 1883 miles from George Bush Intercontinental Airport in Houston, Texas to the Seattle/Tacoma Airport in Seattle, Washington. The travel time (given that the general direction of travel is west) can be computed as

0.2 hours + 0.4 hours + (1883 miles / 480 miles/hour) = 0.6 hours + 3.92 hours = 4.52 hours

Another example is the travel from Dallas/Fort Worth airport to Chicago O'Hare. We will assume that the distance is 1100 miles and the general direction of travel is north. The travel time can be computed as

0.2 hours + 0.4 hours + (1100 miles/ 510 miles/hour) = 0.6 hours + 2.16 hours = 2.76 hours

Input

Input to your program consists of a series of flights each on a line by itself. Each flight's data contains a single flight direction character in column 1. Directions are given as "N" for North, "S" for South, "E" for East, and "W" for West. Column 2 will always be blank. The distance traveled ($0 \le$ distance ≤ 6000 miles) will start in column 3. Distances are expressed in whole miles.

Output

For each flight, your program is to print the approximate flight time to the nearest 1/100 of an hour, starting in column 1.

Example: Input File

```
E 1883
W 1883
N 1100
S 1100
W 983
```

Output to screen

```
4.09
4.52
2.76
2.76
2.65
```