Extraordinary Programmers Incorporated (EPIC)

Tile Cost Calculator

Specification

EPIC has been contracted by Sonoma State University to write an application that will calculate the cost of tiles for bathrooms, labs, and other facilities on the campus.
All tiles are 1" tiles (including the grout joint) and are purchased by the square yard, the square foot and as individual tiles. The cost of a square foot of tiles is $1/8^{th}$ of the cost of a square yard of a square yard of tiles (rounded to the nearest penny) and the cost of an individual tile is $1/100^{th}$ the cost of a square foot (again, rounded to the nearest penny).
For each room, the University will provide the dimension of the area to be tiled and the cost, per square yard, of the selected tile.

Input

The input data will be read from a file. The name of the input file will be provided as a command line argument.
Each line of the file will contain information for a single calculation; values will be separated by white space as illustrated in the sample input.
Each line will contain 2 measurements in the format `#'#"` where the first non-negative integer value is the number of feet and the second is the number of inches along the dimension. The input line will also contain the cost of a single square yard of tiles.

Output

The results of each calculation should be written to standard output (cout).
One line of output should be produced for each set of calculation data in the input file.
The output should contain the total calculated price, the number of square yards of tile and the price per square yard of tile, the number of square feet and the price per square foot, and the number of square inches and the price per square inch.
The output should be formatted as illustrated in the corresponding output below.

Sample Input

```
0'1" 0'1" 32.00
1'0" 1'0" 32.00
3'0" 3'0" 32.00
4'0" 3'3" 48.40
1'3" 2'6" 48.00
```

Corresponding Output

```
Total price is $0.04 (0 @ $32.00; 0 @ $4.00; 1 @ $0.04)
Total price is $4.00 (0 @ $32.00; 1 @ $4.00; 0 @ $0.04)
Total price is $32.00 (1 @ $32.00; 0 @ $4.00; 0 @ $0.04)
Total price is $72.60 (1 @ $48.40; 4 @ $6.05; 0 @ $0.06)
Total price is $19.08 (0 @ $48.00; 3 @ $6.00; 18 @ $0.06)
```