

Eighth: Decimal Fraction Input to a Canonical Binary Fraction (15 points)

You will write a program to convert a decimal fraction to a binary fraction in the canonical representation (*i.e.*, $(-1)^s \times M \times 2^E$). For this program, M lies between $[1, 2)$. You do not have to perform any rounding for this part. You are required to print as many digits after the decimal point as specified by the input.

Input-Output format: Your program will take one file name as its command-line input. Each line in the input file will have a decimal fraction (use a double type to read it) and the number of bits to show in the canonical binary representation separate by space. For each line in the input, you should print the M value and E value in the canonical representation separated by space. Add a newline character after printing the output for each input.

Example Execution:

Let's assume we have the following input file:

```
input.txt
6.25 6
12.5 3
```

The result should be:

```
$/eighth input.txt
1.100100 2
1.100 3
```

We will not give you improperly formatted files. You can assume all your input files will be in proper format, as stated above. Further, we will provide only positive fractions for this part of the assignment (*i.e.*, no negative numbers).