5. House Numbers

Program Name: House.java Input File: house.dat

In the town of Geekville, it was decided that all numbers in a street address would be given in binary. Therefore, all residents had to buy new numbers for their house. Since it takes more metal to make a zero than it takes to make a one, the cost of the digits were sometimes different. You are to write a program that will compute the cost of the new numbers.

Input

The first line of input will contain a single integer `n` that indicates the number of house numbers to follow. Each of the following `n` lines will contain three base 10 integers separated by a single space. The first integer is the cost of a zero in pennies, the second integer is the cost of a one in pennies, and the third integer is the house number.

Output

For each line of input, you will print the binary address, a space, a dollar sign, and the cost of the binary address in dollars and cents. If the cost is less than one dollar, one leading zero shall be printed.

Example Input File

```
4
35 25 111
45 40 2104
11 11 32
33 32 1515
```

Example Output to Screen

```
1101111 $1.85
100000111000 $5.20
100000 $0.66
10111101011 $3.55
```