

IP Addresses

IP addresses are formed from 32 character data streams of 1s and 0s. The decimal format of an IP address is formed by grouping 8 bits at a time and converting each binary group to a decimal number. Decimal IP addresses are written in the form of four integers separated by periods. An example of an IP address is 10.103.45.230.

Input

The first line of input will contain a single integer n that indicates the number of IP addresses to follow. Each of the following n lines will contain a 32 character binary number.

Output

For each binary IP address input, you will print the decimal format of the address.

Example

Input:

```
4
11111111111111111111111111111111
00000011100000001111111111111111
11110000101010100101010100000111
10101010101010101010101010101010
```

Output:

```
255.255.255.255
3.128.255.255
240.170.85.7
170.170.170.170
```