Computers participating in a network such as the Internet each have at least one network address. An address fulfills the functions of identifying the host and locating it on the network. The most common network addressing architecture is Internet Protocol version 4 (IPv4), which consists of 32 bits. An IP address is divided into two logical parts, the network prefix and the host identifier. All hosts on a subnetwork have the same network prefix. This prefix occupies the most-significant bits of the address. The number of bits allocated within a network to the prefix may vary between subnets, depending on the network architecture. The modern standard form of specification of the network prefix is Classless Inter-Domain Routing (CIDR) notation, which counts the number of bits in the prefix and appends that number to the address after a slash (/) character separator. For example, the IPv4 network 192.0.2.0 with the subnet mask 255.255.255.0 is written as 192.0.2.0/24.

To determine whether an IP address is within a subnetwork, we can simply check the most-significant bits by using the subnet mask. If the most-significant bits of such IP address are the same as those of the host identifier, then it is within the subnetwork. Your goal is to write a program to check which addresses are within a given subnetwork.

A possible procedure for checking could be:

Separate CIDR notation into host identifier h and prefix length p
Store the host identifier into a 32-bit unsigned integer h_int
For each address
   Store it into a 32-bit unsigned integer ip_int
   Compare the most significant p bits of ip_int and h_int using subnet mask
End For
Requirement: use bitwise operators to manipulate bits

Input

The input has several cases. Each case starts from a number n, indicating the number of addresses to be examined, and then the CIDR notation, and the n IP addresses follow. The input ends with a single 0.

Output

For each case, the output is enclosed by two dashed lines with 80 dashes (-). Following the upper dashed line, the first line should contain the format "The following addresses are within the subnetwork CIDR:", where CIDR should be replaced by the input CIDR notation. After that, the output should list all the input IP addresses which are within the subnetwork. Each two consecutive cases should be separated by a newline.

Sample Output

```
--------------------------------------------------------------------------------
The following addresses are within the subnetwork 77.0.0.0/8:
77.111.57.42
77.217.16.170
77.90.161.233
77.162.248.6
77.110.239.41
77.11.136.90
77.197.209.147
77.29.199.136
77.147.241.86
77.223.250.226
--------------------------------------------------------------------------------
```

Sample Input

```
40
77.0.0.0/8
77.111.57.42
77.217.16.170
79.79.154.50
77.90.161.233
72.224.27.137
121.243.86.238
81.190.101.22
64.127.125.177
79.206.215.1
77.162.248.6
76.209.165.187
77.110.239.41
77.11.136.90
79.162.61.178
74.115.156.86
76.16.58.141
78.164.254.113
71.0.237.139
76.56.30.153
75.223.107.95
77.197.209.147
44.167.46.94
66.229.167.144
93.34.216.180
79.76.55.175
76.251.108.56
67.215.109.169
77.29.199.136
75.237.229.49
77.147.241.86
65.2.180.208
79.149.113.100
78.40.228.247
72.105.54.114
78.2.60.222
77.223.250.226
76.197.211.234
81.166.205.149
78.48.121.95
32.35.183.88
0
```