1. What is the first valid host on the subnet that the host 172.30.111.196/26 belongs to?
2. Find the network address, broadcast address and valid IP host range for the following addresses:
3. 2.10.243.5 255.255.240.0
4. 193.193.191.193 /30
5. Stark Industries are opening up a new branch in Boulder, Colorado for developing their arc reactor technology. Tony Stark wants you to design a network with optimal IP addressing for the new branch. Use 96.0.0.0/23 to design your network. Use VLSM for proper addressing.

The company employees are divided into 5 categories, each with a fixed requirement for users:

Sales : 72

Engineering : 95

Management : 59

Legal : 25

Housekeeping : 10

Guests : 12

Apart from these, you require 28 IP phones, 6 web cams for security and 4 vending machines, each on their own network.

There is also a conference room which has 15 fast Ethernet cables for internet connectivity.

Important: 96.0.0.128/27 and 96.0.1.48/29 have been specially reserved by the company IT team and are not available for assignment.