

Subnetting Practice # 1

Host IP Address: 195.70.16.93 Six bits have been borrowed to create the required subnets.

What class is this address?		
What is the default subnet mask?		
What is the subnet mask for this host in dotted decimal format?		
What is the subnet mask for this host in IP Prefix format?		
How many subnets were created?		
How many hosts per subnet?		
How many usable hosts per subnet?		
Perform the ANDing process on the supplied host address	Address	
	Subnet Mask	
	Result	
What is the network address for the supplied host address?		
What is the broadcast address for the supplied host address?		
Is the address 195.70.16.159 a Network, Host or Broadcast address?		
Is the address 195.70.16.28 a Network, Host or Broadcast address?		
Is the address 195.70.16.58 a Network, Host or Broadcast address?		
Is the address 195.70.16.164 a Network, Host or Broadcast address?		

Subnetting Practice # 2

Host IP Address: 172.16.126.120 Eight bits have been borrowed to create the required subnets.

What class is this address?		
What is the default subnet mask?		
What is the subnet mask for this host in dotted decimal format?		
What is the subnet mask for this host in IP Prefix format?		
How many subnets were created?		
How many hosts per subnet?		
How many usable hosts per subnet?		
Perform the ANDing process on the supplied host address	Address	
	Subnet Mask	
	Result	
What is the network address for the supplied host address?		
What is the broadcast address for the supplied host address?		
Is the address 172.16.101.54 a Network, Host or Broadcast address?		
Is the address 172.16.21.255 a Network, Host or Broadcast address?		
Is the address 172.16.54.0 a Network, Host or Broadcast address?		
Is the address 172.16.220.43 a Network, Host or Broadcast address?		

Subnetting Practice # 3

Host IP Address: 192.166.21.83 Five bits have been borrowed to create the required subnets.

What class is this address?		
What is the default subnet mask?		
What is the subnet mask for this host in dotted decimal format?		
What is the subnet mask for this host in IP Prefix format?		
How many subnets were created?		
How many hosts per subnet?		
How many usable hosts per subnet?		
Perform the ANDing process on the supplied host address	Address	
	Subnet Mask	
	Result	
What is the network address for the supplied host address?		
What is the broadcast address for the supplied host address?		
Is the address 192.166.21.70 a Network, Host or Broadcast address?		
Is the address 192.166.21.135 a Network, Host or Broadcast address?		
Is the address 192.166.21.72 a Network, Host or Broadcast address?		
Is the address 192.166.21.167 a Network, Host or Broadcast address?		

Subnetting Practice # 4

Host IP Address: 183.91.104.16 Eleven bits have been borrowed to create the required subnets.

What class is this address?		
What is the default subnet mask?		
What is the subnet mask for this host in dotted decimal format?		
What is the subnet mask for this host in IP Prefix format?		
How many subnets were created?		
How many hosts per subnet?		
How many usable hosts per subnet?		
Perform the ANDing process on the supplied host address	Address	
	Subnet Mask	
	Result	
What is the network address for the supplied host address?		
What is the broadcast address for the supplied host address?		
Is the address 183.91.128.161 a Network, Host or Broadcast address?		
Is the address 183.91.255.192 a Network, Host or Broadcast address?		
Is the address 181.91.95.224 a Network, Host or Broadcast address?		
Is the address 181.91.85.63 a Network, Host or Broadcast address?		

Subnetting Practice # 5

Network Number: 192.10.10.0

Required: 14 usable subnets
14 usable hosts per subnetwork

What class is this address?	
What is the default subnet mask?	
How many bits did you borrow?	
What is the new subnet mask for this host in dotted decimal format?	
What is the new subnet mask for this host in IP Prefix format?	
How many subnets were created?	
How many hosts per subnet?	
How many usable hosts per subnet?	
Is the address 192.10.10.95 a Network, Host or Broadcast address?	
Is the address 192.10.10.152 a Network, Host or Broadcast address?	
Is the address 192.10.10.208 a Network, Host or Broadcast address?	
Is the address 192.10.10.120 a Network, Host or Broadcast address?	

Subnetting Practice # 6

Network Number: 165.127.0.0

Required: 950 usable subnets
60 usable hosts per subnetwork

What class is this address?	
What is the default subnet mask?	
How many bits did you borrow?	
What is the new subnet mask for this host in dotted decimal format?	
What is the new subnet mask for this host in IP Prefix format?	
How many subnets were created?	
How many hosts per subnet?	
How many usable hosts per subnet?	
Is the address 165.127.0.254 a Network, Host or Broadcast address?	
Is the address 165.127.106.63 a Network, Host or Broadcast address?	
Is the address 165.127.224.128 a Network, Host or Broadcast address?	
Is the address 165.127.128.224 a Network, Host or Broadcast address?	

Subnetting Practice # 7

Network Number: 118.0.0.0

Required: 119 usable subnets

What class is this address?	
What is the default subnet mask?	
How many bits did you borrow?	
What is the new subnet mask for this host in dotted decimal format?	
What is the new subnet mask for this host in IP Prefix format?	
How many subnets were created?	
How many hosts per subnet? (Use a calculator for this one.)	
How many usable hosts per subnet?	
Is the address 118.61.255.255 a Network, Host or Broadcast address?	
Is the address 118.238.255.255 a Network, Host or Broadcast address?	
Is the address 118.118.255.118 a Network, Host or Broadcast address?	
Is the address 118.224.0.0 a Network, Host or Broadcast address?	

Subnetting Practice # 8

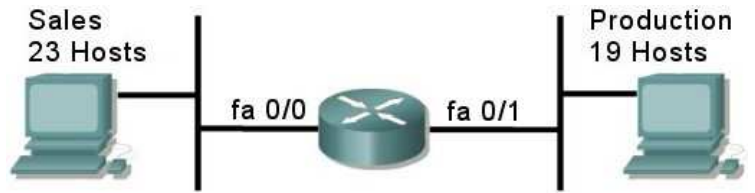
Network Number: 178.101.0.0

Required: 1,957 usable subnets
15 usable hosts per subnet

What class is this address?	
What is the default subnet mask?	
How many bits did you borrow?	
What is the new subnet mask for this host in dotted decimal format?	
What is the new subnet mask for this host in IP Prefix format?	
How many subnets were created?	
How many hosts per subnet?	
How many usable hosts per subnet?	
Is the address 178.101.1.113 a Network, Host or Broadcast address?	
Is the address 178.101.128.159 a Network, Host or Broadcast address?	
Is the address 178.101.192.224 a Network, Host or Broadcast address?	
Is the address 178.101.15.15 a Network, Host or Broadcast address?	

Subnetting Practice # 9

You are the network administrator for XYZ Widgets and Stuff and are required to subnet their network according to the diagram. Your head office has assigned the network **193.5.5.0** for you to use. It is the corporate policy that the IP address assigned to a default gateway is always the **first host address** in the subnet and subnets are always assigned beginning with the first usable subnet in the list.



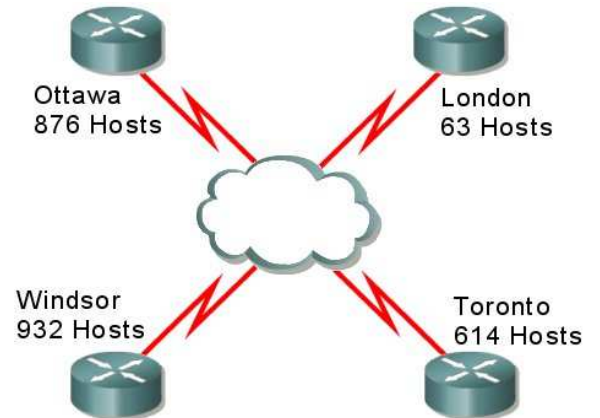
Answer the following:

What class is this address?		What is the default subnet mask (Dotted Decimal)	
How many bits did you borrow?		What is the new subnet mask (Dotted Decimal)?	
How many subnets have been created?		What is the new subnet mask (IP Prefix)?	
How many hosts are there per subnet?		How many usable hosts per subnet?	
Provide the required addresses for the subnetworks you will use.			
Network	Network Address	Host Range	Broadcast Address
Sales			
Production			
Provide the required default gateway address assignments.			
Interface	IP Address	Subnet Mask (Dotted Decimal)	IP Address and Subnet Mask in IP Prefix Format
fa0/0 – Sales			
fa0/1 - Production			

Subnetting Practice # 10

You are the network administrator for Bunch-A-Hosts Limited in Windsor and are required to subnet the network according to the diagram. You have decided to use the network **172.16.0.0**. There are multiple subnets at each site but you are only responsible for providing usable subnetworks with enough IP addresses to cover the current number of hosts and future growth as outlined below.

- Ottawa** - 10% Growth
- Windsor** - 15% Growth
- Toronto** - 10% Growth
- London** - 5% Growth



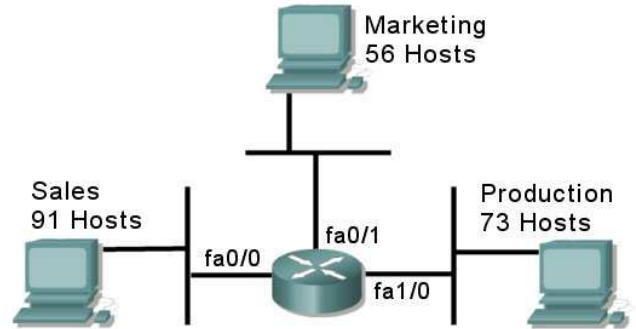
Subnetworks are assigned beginning with the first usable subnet.

Answer the following:

What class is this address?		What is the default subnet mask (Dotted Decimal)	
How many bits did you borrow?		What is the new subnet mask (Dotted Decimal)?	
How many subnets have been created?		What is the new subnet mask (IP Prefix)?	
How many hosts are there per subnet?		How many usable hosts per subnet?	
<i>Provide the required addresses for the subnetworks you will use.</i>			
Network	Network Address	Host Range	Broadcast Address
Ottawa			
Windsor			
Toronto			
London			

Subnetting Practice # 11

You are the network administrator for Leaky Plumbing Supplies Ltd. and are required to subnet their network according to the diagram. Your head office has assigned the network **172.25.0.0** for you to use. **The company anticipates a 25% growth in all areas over the next 5 years.** Your boss expects you to plan for the future. It is the corporate policy that the IP address assigned to a default gateway is always the **last host address** in the subnet and subnets are always assigned beginning with the first usable subnet in the list.

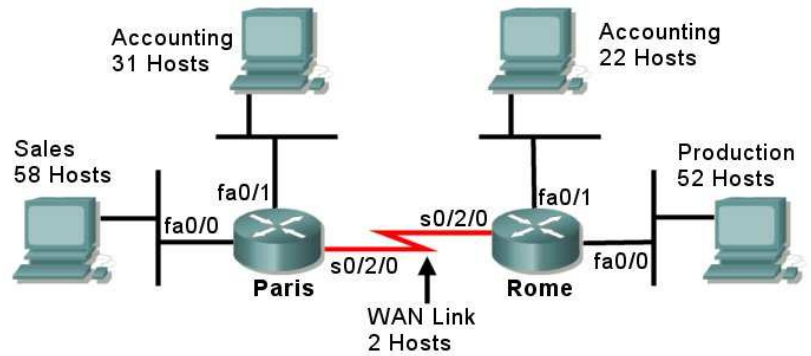


Answer the following:

What class is this address?		What is the default subnet mask (Dotted Decimal)	
How many bits did you borrow?		What is the new subnet mask (Dotted Decimal)?	
How many subnets have been created?		What is the new subnet mask (IP Prefix)?	
How many hosts are there per subnet?		How many usable hosts per subnet?	
Provide the required addresses for the subnetworks you will use.			
Network	Network Address	Host Range	Broadcast Address
Sales			
Marketing			
Production			
Provide the required default gateway address assignments.			
Interface	IP Address	Subnet Mask (Dotted Decimal)	IP Address and Subnet Mask in IP Prefix Format
fa0/0 – Sales			
fa0/1 - Marketing			
fa1/0 - Production			

Subnetting Practice # 12

You are the network administrator for Mangiare Food Supplies in Rome and are required to subnet the network according to the diagram. You have decided to use the network **172.31.0.0**. It is the corporate policy that the IP address assigned to a default gateway is always the **last host address** in the subnet and subnets are always assigned beginning with the first usable subnet in the list. WAN Links use the **first two usable addresses** in a subnet.



Answer the following:

What class is this address?		What is the default subnet mask (Dotted Decimal)	
How many bits did you borrow?		What is the new subnet mask (Dotted Decimal)?	
How many subnets have been created?		What is the new subnet mask (IP Prefix)?	
How many hosts are there per subnet?		How many usable hosts per subnet?	

Provide the required addresses for the subnetworks you will use.

Network	Network Address	Host Range	Broadcast Address
Rome - Production			
Rome- Accounting			
WAN Link			
Paris - Accounting			
Paris - Sales			

Provide the required default gateway and WAN port address assignments.

Interface	IP Address	Subnet Mask (Dotted Decimal)	IP Address and Subnet Mask in IP Prefix Format
Rome – fa0/0			
Rome – fa0/1			
Rome – s0/2/0			
Paris – s0/2/0			
Paris – fa0/1			
Paris – fa0/0			