

## Understanding IP Addressing

Use your notes or other sources to answer the following questions. An IP address is composed of four octets. An octet is composed of 8 binary bits. 200.10.5.6. is an example of an IP Address. In this case the four octets are listed as decimal numbers separated by a dot. This form of an IP address is known as dotted decimal form. All IP addresses can be classified as class A, B or C. The first octet determines what class the IP address is. In the example given here the first octet is 200.

Record the range of values for the **first octet** for each of the following classes:

A = \_\_\_\_\_ B = \_\_\_\_\_ C = \_\_\_\_\_

What is special about a value of **127** in the first octet?

Try this address to see how it works. Go to Start > Programs > Accessories > Command Prompt. This will bring up the DOS window where you can type in DOS commands. Type in the following command:  
**Ping 127.0.0.1** Record the results of this command here:

If you received a reply from this command that indicates that your network interface card is working properly. This is a way of testing a NIC even when you are not connected to a network. This is known as a **loopback** test.

What is special about IP addresses that start with 224 for higher numbers?

Every IP address is composed of two parts, the \_\_\_\_\_id and the \_\_\_\_\_id.

TCP/IP hosts communicate by using the subnet mask to determine what?

Write down the three starting IP addresses for the private IP address ranges:

Class A \_\_\_\_\_ Class B \_\_\_\_\_ Class C \_\_\_\_\_

If you check the IP address of your computer at home most likely it will be a class C private address.

What is the problem with private IP addresses?

What are the two ways of assigning IP addresses to a workstation?

What is purpose of DHCP?

What is NAT and what does it do?

What is the name of the device that connects a local area network to the internet?\_\_\_\_\_

What is DNS and what does it do?

Finding these terms on your computer: Open the DOS prompt and type **IPCONFIG /all**  
Copy down the following information:

Host name\_\_\_\_\_

IP Address\_\_\_\_\_ Subnet Mask\_\_\_\_\_

Physical Address\_\_\_\_\_ Default Gateway\_\_\_\_\_

DHCP Server\_\_\_\_\_ DNS Server\_\_\_\_\_

Date Lease was obtained\_\_\_\_\_