**AP Computer Science Principles Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Windows Networking System Tools**

**ipconfig ping nslookup**

To complete this lab, you will need access to a command prompt. One way to start the *command prompt* is to select *Start Menu | All Programs | Accessories | command prompt.*

**ipconfig**

**ipconfig** is a system tool (the “tool” in this case is a *computer program*) that shows the network settings for *IP address*, *Subnet Mask* and *Default Gateway* on a Windows computer. Run **ipconfig** on your computer by typing **ipconfig** in the command prompt and record your settings here:

IP Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subnet Mask: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Default Gateway: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ipconfig /all**

**ipconfig /all** shows even more detail about Windows networking settings. Run **ipconfig /all** and record these additional settings.

Physical Address (also called the MAC address): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DHCP enabled: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DHCP Server: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNS Servers: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ping**

**ping** is a system tool that tests connectivity. **ping google.com** to test if your computer is connected to the internet. Write the time it took to receive the first reply here:

time = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ms

**ipconfig /release**

**ipconfig /release** releases the DHCP lease. Run **ipcofig /release** and record the new network settings here:

IP Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subnet Mask: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Default Gateway: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Can you still ping google.com? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ipconfig /renew**

**ipconfig /renew** renews the DHCP lease. Run **ipcofig /renew** and record the new network settings here:

IP Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subnet Mask: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Default Gateway: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Can you ping google.com now? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Using Google's DNS server**

Using Google's DNS server is a good security practice when using an unfamiliar network. Hackers can trick you into using a fake version of a website using a technique called “DNS spoofing.”

To configure your computer to use Google's DNS server, go to *Control Panel | Network and Internet* and select *View network status and tasks*. Then, click *Change adapter settings*, and **right click** on *Local area network* and click on *Properties* Select *Internet Protocol Version 4(TCP/IPv4)* and click on *Properties* again. Select *Use the following DNS server addresses* and enter 8.8.8.8 and 8.8.4.4 for the DNS server addresses. Then click on *OK*.

**nslookup**

**nslookup** contacts the DNS server to find the IP address of a domain. Type **nslookup google.com** to find what IP addresses google uses for its domain and enter one of them below. The addresses will be listed below "Non-authoritative answer."

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now, open a browser. Type the address you wrote in the URL bar of a browser. Write the website the address took you to below:

website: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Configure your computer to obtain DNS server automatically**

To restore your computer's network configuration go back to *Control Panel | Network and Internet* and select *View network status and tasks*. Then, click *Change adapter settings*, and **right click** on *Local area network* and click on *Properties.* The, select *Internet Protocol Version 4(TCP/IPv4)* and click on *Properties* again. Select *Obtain DNS server address automatically* and then click on *OK*.