

choose one: Received (or more) Received help from: no help Collaborated with: _____

Homework: /SI110/The Cyber Battlefield/Networks & Protocols 1

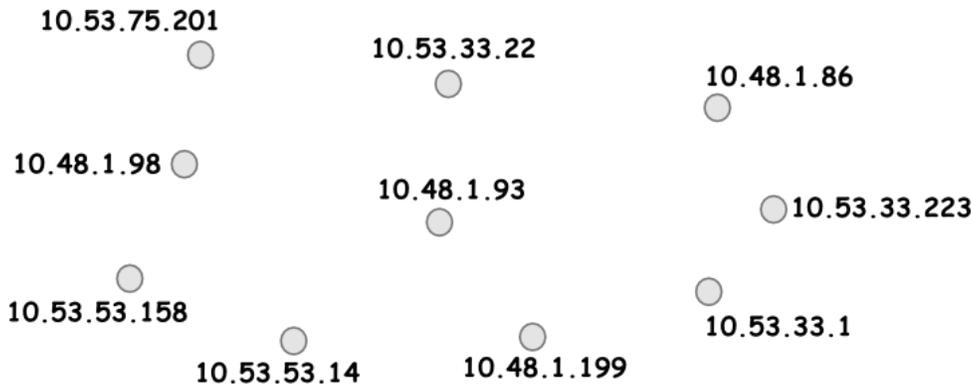
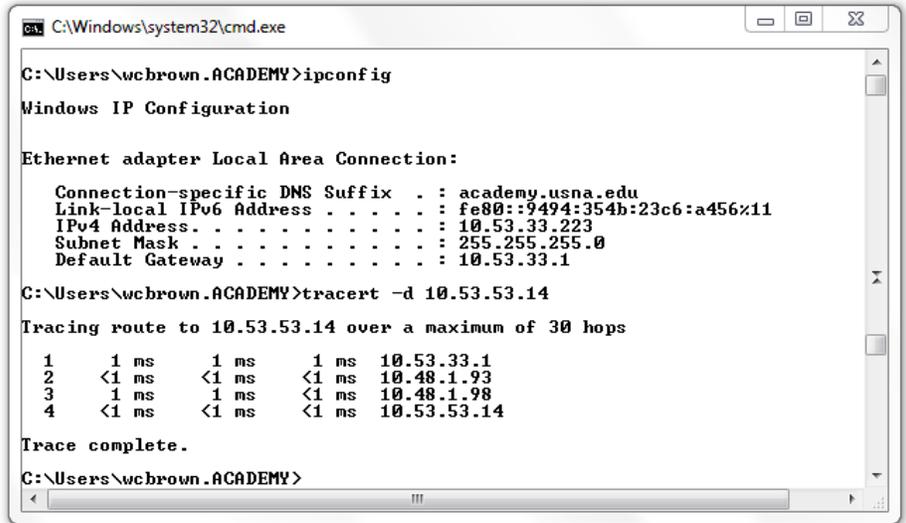
1. Read the class notes first, then fill in the blanks: 10/7/4/0

A computer (in the most general sense) connected to the internet is called a _____. When communicating on the internet (without DNS name resolution), the _____ to which data is to be sent is identified by its _____. Data to be sent across the internet is broken up into small chunks which, together with the address of the recipient, forms what are called _____.

2. When we refer to "host 131.122.20.12", what do the four dot-separated numbers represent? Circle the letter(s) of the correct answer(s): 10/7/4/0

- (a) the contents of the four bits that make up the host's IP address.
- (b) the contents of the four bytes that make up the host's IP address.
- (c) the ASCII encodings of the four characters comprising the host's name.
- (d) the ASCII encodings of the digits comprising the host's IP address.

3. To the right you see output from **ipconfig** and **tracert** commands. Below you see number of dots representing hosts on the internet. Draw a circle around the host that these commands have been executed on (i.e. the source of the **tracert** command). Draw a square around the host that's the destination for the **tracert** command. Draw lines to indicate the path that, according to the **tracert** output, a packet takes from the source host to the destination host.



4. Fill in the following table:

host name	IP address
macallan.cs.usna.edu	↔
	↔ 193.170.37.138
www.usna.edu	↔
	↔ 10.1.78.32

20/15/10/0

5. An IPv4 address is _____ bits. An IPv6 address is _____ bits.

10/7/4/0

6. Consider the following nslookup command and output:

C:\Users\wcbrown.ACADEMY>nslookup www.foobar.org

10/7/4/0

Server: ns1.usna.edu

a. This host's true name is www.netability.ie.

Address: 10.1.74.10

What country does this host appear to be in?

Non-authoritative answer:

b. Listed under "Address" we see two things,

Name: www.netability.ie

2a03:8900:0:100::5 and 46.182.8.5. Why are

Addresses: 2a03:8900:0:100::5

there two, and what's the difference?

46.182.8.5

Aliases: www.foobar.org

5. When you enter the URL <http://www.usafa.af.mil/news/index.asp> into your browser's address bar, what server gets contacted *before* the browser sends the GET request to the usafa.mil webserver?

10/7/4/0

7. Domain names are hierarchical. What part of rona's domain name is common to the domain names of all hosts at the Academy?

10/7/4/0

8. The course notes for this lesson include a few xkcd comics. The one with the campfire refers to the "192.168/16 block" of IP addresses. Use your Internet searching skills to look up 192.168/16 and explain what's special about addresses of the form 192.168.*.* and, ultimately, what's the joke with this comic?

10/7/4/0