

Skill 9.01 Exercise 1

Two computers are built by different manufacturers. One is running a Web server and the other is running a Web browser. What determines whether the two computers can talk to one another?

Skill 9.01 Exercise 2

Which of the following best describes the relationship between the World Wide Web and the Internet?

- (a) The World Wide Web is a protocol that is accessed using a data stream called the Internet
- (b) The World Wide Web is a system of linked pages, programs, and files that is accessed using a data stream called the Internet
- (c) The World Wide Web is a system of linked pages, programs, and files that is accessed via a network called the Internet
- (d) The World Wide Web is a Web site that is accessed using a protocol called the Internet

Skill 9.01 Exercise 3

Which of the following best explains how IP addresses are assigned?

- (a) As a new device is connected to the Internet, it is assigned an IP address to enable communication on the network
- (b) IP addresses are assigned only to servers that host Web sites; user devices do not require an IP address
- (c) New devices are connected to the Internet without an IP address, but are eventually assigned an IP address once they can be verified by a certification authority
- (d) New devices are connected to the Internet without an IP address; IP addresses are assigned only for encrypted communications.

Skill 9.02 Exercise 1

Which of the following IPv4 addresses are illegal? Explain.

- (a) 1.1.1.1
- (b) 255.10.10
- (c) 197.10.22.10
- (d) 256.10.10.10

How many IP addresses are possible with IPv4? What's the problem?

Skill 9.03 Exercise 1

Internet protocol version 6 (IPv6) has been introduced to replace the previous version (IPv4). What is the major benefit of IPv6 over IPv4?

Which of the following IPv6 addresses are illegal? Explain.

- (a) FFDC : C8 : 3E8 : 0000 : 567A : 0000 : 45BB : 2134
- (b) 1234 : C811 : 113E8 : 0000 : 567A : 0000 : 45BB : 2134
- (c) AFFB : C8 : 3E8 : 0000 : 567A : 0000 : 45BB
- (d) ABCD : C8 : 3E8 : 0GAF : 567A : 0000 : 45BB : 2134

How many more possible IPv6 address are there compared to IPv4?

Skill 9.04 Exercise 1

Navigate to <https://whatismyipaddress.com/> and identify the IP address of the device you are working from. Do you have an IPv4 or an IPv6 address or both?

Locate a different device, your phone for example. Make sure your phone is not connected to the same network as your computer. What is the IP address of this device? Are they different or the same? Why?

Navigate to https://ipinfo.info/html/ip_checker.php and look up the IP address of a website you visit often. Cut-and-paste the IP address into your address bar. Can you navigate to it? Why or why not?

Skill 9.05 Exercise 1

Consider the breakdown of the IP address shown below,

141.213	127	13
UMich network	Medicine department	Lab computer

Which of these IP addresses identify computing devices in the UMich Medicine department's network?

- (a) 141.213.127.254
- (b) 141.212.127.73
- (c) 142.213.127.124
- (d) 141.213.127.13

If the UMich network reserved 3 bits for the departments, how many departments could they differentiate between? How many computers could be addressed in each department?

What is your download speed?