1.1 Describe in your own words how the web works! In as much detail as you can, describe **all** the sequences of events that take place from the time a user presses Enter on the keyboard after typing in www.rpi.edu into the address bar to when the webpage is finished rendering in the browser. Specifically, tell me in great detail the **two protocols** we discussed in class in action. (8 points)

1. Protocol is defined in the case of rpi's website https (Hypertext Transfer Protocol Secure) is defined which tells the browser to connect to a server using TLS.
2. The domain name is processed through a DNS lookup and the server's IP address is found.
    a. First through the root name
    b. Then the .edu name server
    c. Lastly the rpi.edu name server
3. The browser then establishes a TLS connection to the server and a TLS handshake occurs giving the client a secure connection to the server.
4. Once the connection is made an HTTP request to the server is made to get the resources in rpi's root directory.
5. The server then processes this request and sends the client back a response.
6. Once a response is received the browser looks to the response headers on how to render the resources.
7. Once completed the browser renders all the index and all resources in the root directory.

1.2 Explain what is meant by a Universal Interface in a REST API. (5 points)

What is meant by a Universal Interface in a REST API is that the interface between clients and Servers should give clients the ability to learn how to navigate the whole API just by connecting and viewing the response headers sent by the API.

1.3 Explain how your browser chooses which CSS rule to apply to a tag in the case where there are multiple rules that could apply. (3 points)

The browser chooses which CSS rule to apply by specificity in the order of style attribute first, then id selector, then class selector, then plain tag last. If there are multiple classes given it will choose the first in the CSS.

1.4 What command would you use to change the ownership of a file or directory on a Unix machine (such as your Azure VM)? Show me a complete command invocation to make a directory named `/var/www/html` be owned by a user named `callab5`. (4 points)

ssh callab5@callab5.eastus.cloudapp.azure.com

cd /var/www

chown callab5:callab5 html