Let’s begin by capturing a set of Ethernet frames to study. Do the following:

- First, make sure your browser’s cache is empty. (To do this under Netscape 7.0, select Edit->Preferences->Advanced->Cache and clear the memory and disk cache. For Internet Explorer, select Tools->Internet Options->Delete Files. For Firefox select Tools->Clear Private Data.)
- Start up the Wireshark packet sniffer.
- Enter the following URL into your browser:
  http://gaia.cs.umass.edu/wireshark-labs/HTTP-ethereal-lab-file3.html
Your browser should display the rather lengthy US Bill of Rights.

Stop Wireshark packet capture. First, find the packet numbers (the leftmost column in the upper Wireshark window) of the HTTP GET message that was sent from your computer to gaia.cs.umass.edu, as well as the beginning of the HTTP response message sent to your computer by gaia.cs.umass.edu.

Since this lab is about Ethernet, we’re not interested in IP or higher layer protocols. So optionally you can change Wireshark’s “listing of captured packets” window so that it shows information only about protocols below IP. To have Wireshark do this, select Analyze->Enabled Protocols. Then uncheck the IP box and select OK.

Now, answer the following questions, you’ll need to look into the packet details and packet contents windows (the middle and lower display windows in Wireshark).

Select the Ethernet frame containing the HTTP GET message. (Recall that the HTTP GET message is carried inside of a TCP segment, which is carried inside of an IP datagram, which is carried inside of an Ethernet frame). Expand the Ethernet information in the packet details window. Note that the contents of the Ethernet frame (header as well as payload) are displayed in the packet contents window.

Answer the following questions, based on the contents of the Ethernet frame containing the HTTP GET message. Whenever possible, when answering a question you should hand in a printout of the packet(s) within the trace that you used to answer the question asked. Annotate
the printout to explain your answer. To print a packet, use File->Print, choose Selected packet only, choose Packet summary line, and select the minimum amount of packet detail that you need to answer the question.

1. What is the 48-bit Ethernet address of your computer?
2. What is the 48-bit destination address in the Ethernet frame? Is this the Ethernet address of gaia.cs.umass.edu? What device has this as its Ethernet address?

Next, answer the following questions, based on the contents of the Ethernet frame containing the first byte of the HTTP response message.

3. What is the value of the Ethernet source address? Is this the address of your computer, or of gaia.cs.umass.edu (Hint: the answer is no). What device has this as its Ethernet address?
4. What is the destination address in the Ethernet frame? Is this the Ethernet address of your computer?