1. Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?

My browser is running HTTP version 1.1.

The version of HTTP the server runs is also version 1.1.

2. What languages (if any) does your browser indicate that it can accept to the server?

```
Accept-Language: zh-CN,zh;q=0.9,en;q=0.8,en-GB;q=0.7,en-US;q=0.6\r\n
\r\n
```

3. What is the IP address of your computer? Of the gaia.cs.umass.edu server?

My IP address: 172.20.4.179 ServerIP address: 128.119.245.12

4. What is the status code returned from the server to your browser? (ignore the favicon.ico request)

200 OK

5. When was the HTML file that you are retrieving last modified at the server?

```
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.25 mod_perl/2.0.11 Perl/v5.16.3\r\n
Last-Modified: Mon, 22 Nov 2021 06:59:02 GMT\r\n
```

6. How many bytes of content are being returned to your browser?

Totally 128 bytes.

7. By inspecting the raw data in the packet content window (bottom third of Wireshark), do you see any headers within the data that are not displayed in the packet-listing window (top third of Wireshark)? If so, name one.

I don't see any.

8. Inspect the contents of the first HTTP GET request from your browser to the server. Do you see an "IF-MODIFIED-SINCE" line in the HTTP GET?

There is no IF-MODIFED-SINCE.

9. Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?

```
Congratulations again!  Now you've downloaded the file lab2-2.html. <br>\n
This file's last modification date will not change.  <p>\n
Thus  if you download this multiple times on your browser, a complete copy <br>\n
will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE<br>\n
field in your browser's HTTP GET request to the server.\n
```

10. Now inspect the contents of the second HTTP GET request from your browser to the server. Do you see an "IF-MODIFIED-SINCE:" line in the HTTP GET? If so, what information follows the "IF-MODIFIED-SINCE:" header?

If-Modified-Since: Mon, 22 Nov 2021 06:59:02 GMT\r\n

11. What is the HTTP status code and phrase returned from the server in response to this second HTTP GET? Did the server explicitly return the contents of the file? Explain.

304 Not Modified

The file is not returned since it is not modified.

12. How many HTTP GET request messages did your browser send? Which packet number in the trace contains the GET message for the Bill or Rights?

1

6

13. Which packet number in the trace contains the status code and phrase associated with the response to the HTTP GET request?

15

14. What is the status code and phrase in the response?

200 OK

15. How many data-containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights?

```
∨ [4 Reassembled TCP Segments (4861 bytes): #15(1460), #16(1460), #17(1460), #20(481)]
     [Frame: 15, payload: 0-1459 (1460 bytes)]
     [Frame: 16, payload: 1460-2919 (1460 bytes)]
     [Frame: 17, payload: 2920-4379 (1460 bytes)]
     [Frame: 20, payload: 4380-4860 (481 bytes)]
     [Segment count: 4]
```

16. How many HTTP GET request messages did your browser send? To which Internet addresses were these GET requests sent?

3

```
   29 0.556656    172.20.4.179      128.119.245.12    HTTP    568 GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
   33 0.577920    128.119.245.12    172.20.4.179      HTTP    1355 HTTP/1.1 200 OK  (text/html)
   37 0.605141    172.20.4.179      128.119.245.12    HTTP    514 GET /pearson.png HTTP/1.1
   41 0.626443    128.119.245.12    172.20.4.179      HTTP    745 HTTP/1.1 200 OK  (PNG)
   67 0.865730    172.20.4.179      178.79.137.164    HTTP    481 GET /8E_cover_small.jpg HTTP/1.1
   70 0.948567    178.79.137.164    172.20.4.179      HTTP    225 HTTP/1.1 301 Moved Permanently
```

128.119.245.12

128.119.245.12

178.79.137.164

17. Can you tell whether your browser downloaded the two images serially, or whether they were downloaded from the two web sites in parallel? Explain.

My browser downloads the images serially since the images are received sequentially.