

Homework Assignment #1
CS 360 Special Topics: Computer Networking

DUE: March 1, 2007, 1pm
Submit a typed solution as an ASCII text file.
20 Points

- 1) Read the RFC for User Datagram Protocol (UDP). RFCs may be found at <http://rfc-editor.org>.
- 2) Explain, using a few English sentences, how UDP and our MathPacket are related. You may draw (ASCII art) a diagram to aid your explanation.
- 3) Draw (ASCII art) what a MathPacket looks like when it is on the wire. Use hexadecimal numbers to represent each byte. You need to include the UDP header but not an IP header or link-layer header. You do not need to fill out the UDP checksum.

The MathPacket to use is one that requests an add of the numbers 1 and 2.

- 4) Draw the pseudo header conceptually prefixed to the UDP header for the purpose of calculating the UDP checksum, as specified in the RFC for UDP. Do not calculate the checksum. Assume the source address 127.0.0.1 is stored as follows: **7f000001**

The source address and destination addresses you use should be 64.59.233.238 and 64.59.233.204, respectively. The source and destination ports are 9998 and 32001, respectively. The protocol number is specified in the RFC.

How to submit: submit cs360s07 Hmwk1_PUNetID.txt

Extra credit (+5 points): Calculate the UDP checksum for the above packet. Submit any source code you write for this endeavor in such a way that I can execute it (submit cs360s07 Hmwk1_EC_PUNetID.tar.gz). If you use software (other than a calculator) that you did not produce, put a description and URL of that software in your ASCII file. Do not include the above ASCII file in this tar file. If this is done by hand (or calculator), type up your solution in the above mentioned ASCII file and show all work.