Homework 3

This homework is only for preparing the midterm exam. Don't hand in your solutions to TAs.

Part I. **Problems** of **Chapter 3** in the textbook.

P5,

P15 (assume that the transmission rate is 1 Gbps and the round-trip time is 30 ms. Use slide 55 of Chapter 3 to help solve this problem),

P22

Part II. Additional problems.

II.1 (P4) UDP and TCP use one's complement sum (of 16-bit integers) for their checksums. Assume that a host receives a UDP segment of 48 bits, which consists of two 16-bit integers and one 16-bit checksum. The binary representation of the two 16-bit integers are

11011101 11110001

10000000 00000000

The binary representation of the checksum field is

00110010 00001101

(a) Is the segment considered correctly received or not?

(b) What does the receiver do?

II.2 (R3) How is a UDP socket fully identified? What about a TCP socket?

II.3 (R4) Describe why an application developer might choose to run an application over UDP rather than TCP.

II.4 (R5) Voice and video traffic in the Internet is often sent over TCP socket (rather than UDP socket). Why?