

## CMPT 371: Quiz (1)

Name:

Student Number:

**(Q1 - 15 points)** What is the end-to-end delay of sending one packet over  $N$  links (i.e.  $N-1$  routers on the way) with transmission rate  $R$ ? Why?

What is the end-to-end delay of sending  $P$  packets over  $N$  links? Why?

**(Q2 - 5 points)** Let  $\alpha$  denote the rate of packets arriving at a link in packets/second, and  $\mu$  denote the link's transmission delay in packets/second. How would you define the total delay in such a link?

**Hint :** Queuing Delay can be defined by  $IL/R(1-I)$  where  $I$  is the traffic intensity.