Exercise1:

Q1.the IP address of gaia.cs.umass.edu:128.119.245.12

port number:80

the IP address and TCP port numbers used by the client computer (source):192.168.1.102;1161

Q2. sequence number:232129013

Q3.

No	sequence number	sent time	received time	RTT	EstimatedRTT
1	232129013	0.026477	0.053937	0.027460	0.027460
2	232129578	0.041737	0.077294	0.035557	0.028472
3	232131038	0.054026	0.124085	0.070059	0.033670
4	232132498	0.054690	0.169118	0.114428	0.043765
5	232133958	0.077405	0.217299	0.139894	0.055781
6	232135418	0.078157	0.267802	0.189645	0.072514

Q4. 565,1460,1460,1460,1460,1460

Q5. 5840;No,5840>1460.

Q6.No, the sequence number never repeated.

Q7.1460, the server waits for a short time after receiving a packet. If consecutive new packets are received within this period of time, the server directly sends the ACK of the latter and ignores the ACK of the former.

Q8.Throughput=Total data transmission/The total time
=(232293103-232129013)/(5.461175-0.026477)=164090/5.434698=30193.03

Eexrcise2:

No	Source IP	Destination IP	Protocol	Info
295	10.9.16.201	10.99.6.175	TCP	50045 > 5000 [SYN] Seq=2818463618 win=8192 MSS=1460
296	10.99.6.175	10.9.16.201	TCP	5000 > 50045 [SYN, ACK] Seq=1247095790 Ack=2818463619 win=262144 MSS=1460
297	10.9.16.201	10.99.6.175	TCP	50045 > 5000 [ACK] Seq=2818463619 Ack=1247095791 win=65535
298	10.9.16.201	10.99.6.175	TCP	50045 > 5000 [PSH, ACK] Seq=2818463619 Ack=1247095791 win=65535
301	10.99.6.175	10.9.16.201	TCP	5000 > 50045 [ACK] Seq=1247095791 Ack=2818463652 win=262096
302	10.99.6.175	10.9.16.201	TCP	5000 > 50045 [PSH, ACK] Seq=1247095791 Ack=2818463652 win=262144
303	10.9.16.201	10.99.6.175	TCP	50045 > 5000 [ACK] Seq=2818463652 Ack=1247095831 win=65535
304	10.9.16.201	10.99.6.175	TCP	50045 > 5000 [FIN, ACK] Seq=2818463652 Ack=1247095831 win=65535
305	10.99.6.175	10.9.16.201	TCP	5000 > 50045 [FIN, ACK] Seq=1247095831 Ack=2818463652 win=262144
306	10.9.16.201	10.99.6.175	TCP	50045 > 5000 [ACK] Seq=2818463652 Ack=1247095832 win=65535
308	10.99.6.175	10.9.16.201	TCP	5000 > 50045 [ACK] Seq=1247095831 Ack=2818463653 win=262144

Q1.2818463618

Q2.1247095790, 2818463619, seq+1

Q3. 2818463619, 1247095791,no

Q4. Client which first sent FIN in No.305; simultaneous close

Q5. client to server:2818463653-2818463618-2=33

　　server to client:1247095831-1247095790-2=39

data=final ACK-Initial Sequence Number-2