Part A.

- Use the **ipconfig** command to find your default gateway
- Use the following ping command to ping your default gateway: **ping –f -l 3000 default_gateway** (default_gateway should be the IP address of your default gateway)

Answer the following about part A:

1.) What does the –f option do in the ping command?
2.) What does the –l 3000 option do in the ping command?
3.) What happens when you execute the **ping –f -l 3000 default_gateway** command?
4.) Why does this happen?
5.) What is the largest value you could replace the 3000 with in order to keep from getting an error message?
6.) Explain this value. (Hint: it has to do with the MTU of Ethernet, 1500 bytes and the header sizes of ip and icmp)

Part B.

- Capture the packets for the following ping command using Wireshark: **ping -l 3000 default_gateway**

Answer the following questions about the captured packets:

7.) Document the values of the following fields for the first ICMP echo request and ICMP echo reply and all associated fragments (if applicable):
  a. Fragment ID (IP ID)
  b. More fragments flag
  c. Fragment Offset
  d. ICMP Sequence Number
  e. ICMP Identifier
8.) Is the IP header encapsulated in all of the fragments? Why?
9.) Is the ICMP header encapsulated in all fragments? Why?
10.) What is the size in bytes of an Ethernet header?
11.) Using the above information, what is the largest total possible size of an Ethernet frame including all headers (even the Ethernet header)?
12.) What is the largest amount of actual payload data (not counting any header information) that can be included in a fragment generated from an ICMP ping packet?