Turn in all numbered problems

1) (5 pts) Chapter 3 Text Book Problem 15. **For your answer, list the bridge, each of the bridges interfaces and then the nodes the bridge knows are reachable through that interface.**
Example: Bridge 1 has two interfaces A-Interface and B2 interface, on the A-interface node A is the only possible node it can learn, on the B2-interface it is possible for B1 to learn about nodes C and D. After the three transmissions, determine which nodes are known to each bridge and on what interface. Look at problem 3-16 for some extra help.

2) (5 pts) Chapter 3 Text Book Problem 17 – remember as each bridge learns where a node is it forwards traffic for the node on the one link only. The first transmission requires all bridges to forward a packet out on all links. After that transmission, some bridges will selectively forward packets.

3) (5 pts) Chapter 3 Text Book Problem 39 – the MTU of 380 in this problem refers to the IP packet size of data + header size (360 bytes of data and 20 bytes for the header). The MTU of 380 Bytes is the data size for the frame sent out on the link and does not include the link header (so overall frame size sent on the link is 380 Bytes + link header size). In Figure 3.18b, the packets are 532 Bytes in length (512 Bytes of data and 20 Bytes of header). The data is what is fragmented in going from 512 Bytes to a maximum of 360 Bytes.

Create a table to hold your answer – Column headings are shown below:

Flags	Offset	Bytes of Data	Source of data

For the flags, a value of 1 indicates that packet is an intermediate fragment, a value of 0 indicates that it is the last fragment of a larger packet (the flag value is 1 for all fragments except for the last one). Source of data is which fragment packet (1, 2 or 3) from figure 3.18b provided the data used in the new fragment.

4) (5 pts) Chapter 3 Text Book Problem 40 – Answer the following questions based off of the information provided by the textbook. Size of the IP packet is 576 bytes.
a) For a standard IP packet what is the maximum bandwidth (transmission rate) that is possible so that the identification field does not wrap around in 60 seconds.
b) What might happen if the bandwidth rate were exceeded in parts a?

Hint for a and b: what is the maximum number of unique IP packets that can be outstanding in 60 seconds, and how many bits does that represent?

The following problems are extra problems that you should consider working.
A) Chapter 3 Text Book Problem 47
B) Chapter 3 Text Book Problem 53
C) Chapter 3 Text Book Problem 56
D) Chapter 3 Text Book Problem 63
E) Chapter 3 Text Book Problem 73