1. Consider the CRC generator polynomial $x + 1$ used to generate CRC checksums like you did in the project.
   a. How many bits are in the resulting checksum?

   b. Consider the message 101. What is the checksum value (show your division).

   c. Consider the message 111. What is the checksum value (show your division)

   d. You have seen this CRC algorithm under a different name. What is it?

2. TCP acknowledgements are not reliable – they are not retransmitted if they are lost in transit. Assume that 50% of all TCP acknowledgements are lost. Does this affect the reliability of a session? Why or why not?

3. Why do IP packets carry a time-to-live (TTL) field? What would happen if they didn’t have it?

4. Consider a reliable data transfer protocol that uses only negative acknowledgements (i.e. messages from the receiver indicating that particular data was not received). Suppose the sender sends data only infrequently. Would a NAK-only protocol be preferable to a protocol that uses ACKs? Why? Now suppose the sender has a lot of data to send and the end-to-end connection experiences few losses. In this second case, would a NAK-only protocol be preferable to a protocol that uses ACKs? Why?