Homework 6. May 25, 2021

1. Suppose that the clock-driven scheme for generating initial sequence numbers is used with a 15-bit wide clock counter. The clock ticks once every 100 msec, and the maximum packet lifetime is 60 sec. How often need resynchronization take place

   (a) in the worst case?

   (b) when the data consumes 240 sequence numbers/min?

2. Why does the maximum packet lifetime, T, have to be large enough to ensure that not only the packet but also its acknowledgements have vanished?
3. In Figure 6-20, suppose a new flow *E* is added that takes a path from *R1* to *R2* to *R6*. How does the max-min bandwidth allocation change for the five flows?
4. Give a potential disadvantage when Nagle's algorithm is used on a badly-congested network.
5. If the TCP round-trip time, *RTT*, is currently 30msec and the following acknowledgements come in after 26, 32, and 24 msec, respectively, what is the new *RTT* estimate using the Jacobson algorithm? Use α=0.9.