Chapter 20 Problems
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20.3)

RTT = 9 time units
Since the window size is 7 segments, and the segment transmission time is 1 unit, the window will close and remain closed for 2 time units, after which the first segment will be acked. After this, one ack will be received per time unit.
Maximum achievable throughput = 1 segment / time unit

20.9)

8 bit sequence number: window size = 255
255 packets * 128 bytes = maximum 32640 bytes outstanding

20.15)

2^14 = 16384
The window size is a 16 bit number, so 2^16 = 65536
Maximum window size in octets: 16384 * 65536 = 1 073 741 824
The window size will never need to be greater than 1G octet, therefore, F <= 14

20.16)

SRTT(K + 1) = a * SRTT(K) + (1 – a) * RTT(K + 1)
SRTT(K + 1) = a * SRTT(K) + (1 – a) * RTT((1 – a^n)/(1 – a))

20.20)

20.21)