1) C, The ACK number in TCP specifies that all data up to (ACK number - 1) has been received.
2) No, byte number 1335 from this segment because it is not included in the current transmission.
3) 4, Whether it increases the timeout depends on the deviation.
4) Time out formula : Timeout=SRTT+4 · DevRTT
   First formula = SRTT=(1−alpha)*SRTTold+alpha*SampleRTT
   SRTT=(1−0.125)*100+0.125*108 alpha is 0.125 = 101ms
   Second formula = DevRTT=(1−beta)*DevRTTold+beta*|SampleRTT−SRTTnew|
   Beta = 0.25 , DevRTTold=8 ms , |SampleRTT−SRTTnew|=|108−101|=7ms
   DevRTTnew=(1−0.25)*8+0.25*7 = 7.75ms

   Final : Timeout=101+4 · 7.75=101+31=132ms

5) C. Flow control, The **receive window** (RWND) field in a TCP header is used to inform the sender about the amount of buffer space available on the receiver's side
6) **1.5 RTT** is required for both the sender and receiver to fully establish connection state, because it uses a 3 way handshake so each part takes 0.5 RTT.
7) B triple dupe acks
8) True, it may set its retransmission timeout too short. This leads to the sender prematurely assuming that a segment has been lost when it has not, triggering an unnecessary timeout and retransmission.
9) HTTP, FTP, SMTP
10) Time to clear = Buffersize / upload rate = 100k / 125k = 0.8 seconds
11) Router can upload at 125k per second, bens client is sending 150k per second which is 25k faster, buffersize / excess rate = 100k/25k = 4 seconds
12) RTT = 2 * latency = 2 * 100ms = 200ms, fixed window size is 4 packets so to get rate we do window size / rtt = 4/0.2 = 20, so 20 packets per second.