

$$V = 2 \text{ Mbps}$$

cont. pipe

cont. cong.

$$W^R = 8 \text{ MSS} = RTT \times BW$$

$$BW = \frac{8 \text{ MSS}}{100 \text{ ms}} = \frac{8 \cdot 1460 \text{ bytes}}{100 \text{ ms}} = \frac{9344 \text{ kbps}}{1}$$

$$V_{\text{entire}} = RTT \times BW = 100 \text{ ms} \times 2 \text{ Mbps} = 1712 \text{ MSS}$$

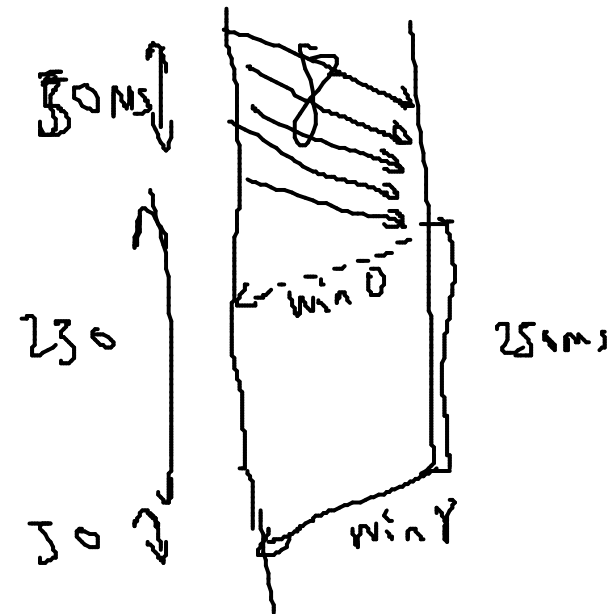
a)

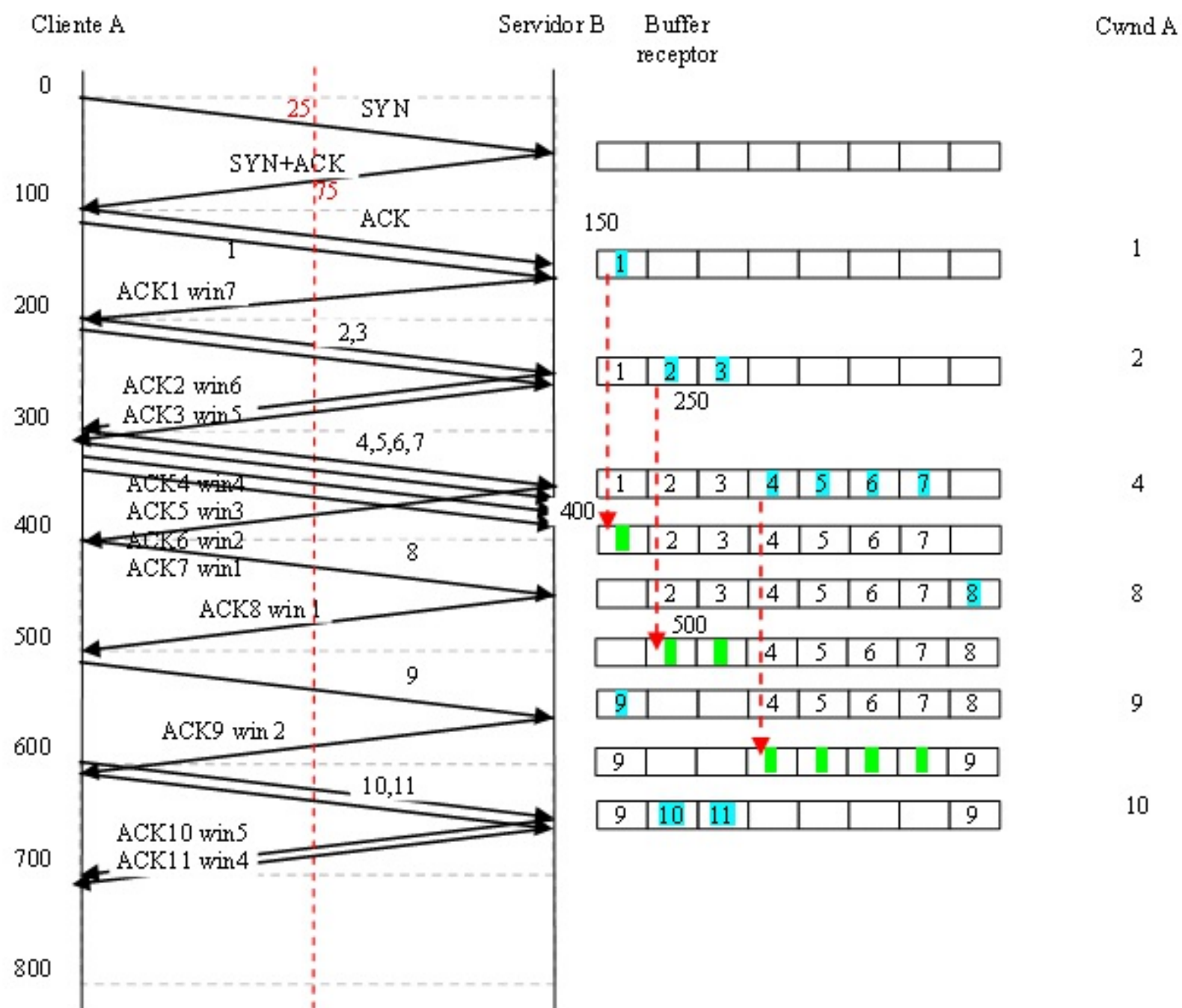
$$V_{\text{el App}} = \frac{8 \text{ MSS}}{250 \text{ ms}} = 32376 \text{ kbps}$$

$$V_{\text{el Red+App}} = \frac{8 \text{ MSS}}{RTT + 250 \text{ ms}} = 26697 \text{ kbps}$$

$$50 \text{ M} = \cancel{50000}$$

b)





Nº paq	Timesta mp (ms)	Paquete	cwnd A	Win B	Disponible=Min (WR,cwnd)- pendientesACK
1	25	ipA.pA > ipB.pB: S 0:0(0) win 8MSS <mss 1460>	1		SlowStart
2	75	ipB.pB > ipA.pA: S 0:0(0) ack 1 win 8MSS <mss 1000>	1	8	1
3	125	ipA.pA > ipB.pB: . ack 1 win 8MSS			
4	125	ipA.pA > ipB.pB: 1:1461(1460) ack 1 win 8MSS			0
5	175	ipB.pB > ipA.pA: . ack 1461 win 7MSS	2	7	2
6	225	ipA.pA > ipB.pB: 1461:2921(1460) ack 1 win 8MSS			1
7	225	ipA.pA > ipB.pB: 2921:4381(1460) ack 1 win 8MSS			0
8	275	ipB.pB > ipA.pA: . ack 2921 win 6MSS	3	6	3
9	275	ipB.pB > ipA.pA: . ack 4381 win 5MSS	4	5	4
10	325	ipA.pA > ipB.pB: 4381:5841(1460) ack 1 win 8MSS			3
11	325	ipA.pA > ipB.pB: 5841:7301(1460) ack 1 win 8MSS			2
12	325	ipA.pA > ipB.pB: 7301:8761 (1460) ack 1 win 8MSS			1
13	325	ipA.pA > ipB.pB: 8761:10221(1460) ack 1 win 8MSS			0
14	375	ipB.pB > ipA.pA: . ack 5841 win 4MSS	5	4	4
15	375	ipB.pB > ipA.pA: . ack 7301 win 3MSS	6	3	3
16	375	ipB.pB > ipA.pA: . ack 8761 win 2MSS	7	2	2
17	375	ipB.pB > ipA.pA: . ack 10221 win 1MSS	8	1	1
18	425	ipA.pA > ipB.pB: 10221:11681(1460) ack 1 win 8MSS			0
19	475	ipB.pB > ipA.pA: . ack 11681 win 1MSS	9	1	1
20	525	ipA.pA > ipB.pB: 11681:13141(1460) ack 1 win 8MSS			0
21	575	ipB.pB > ipA.pA: . ack 13141 win 2MSS	10	2	2 CongAvoid
22	625	ipA.pA > ipB.pB: 13141:14601 (1460) ack 1 win 8MSS			1
23	625	ipA.pA > ipB.pB: 14601:16061 (1460) ack 1 win 8MSS			0
24	675	ipB.pB > ipA.pA: . ack 14601 win 5MSS	10	5	5
25	675	ipB.pB > ipA.pA: . ack 14601 win 4MSS	11	4	4
	725	ipA.pA > ipB.pB: 16061:17521 (1460) ack 1 win 8MSS			3