

5

SN:

$$MSL = 60s$$

$$BW = 100 \text{ Mbps}$$

$$\text{Se transmiten: } 60 \cdot 100 = 6000 \text{ Mbit} = 750 \cdot 10^6 \text{ byte}$$

Por lo tanto, se necesitan por lo menos 30 bits, ya que:

$$2^{30} = 1.073.741.824 > 750.000.000$$

y

$$2^{29} = 536.870.912 < 750.000.000$$

SN de 30 bits

AW:

$$RTT = 100 \text{ ms} = 0.1s$$

$$BW = 100 \text{ Mbps}$$

$$N_{\text{Bytes}} = 2 \cdot RTT \cdot BW = 2 \cdot 0.1s \cdot 100 \frac{\text{Mbit}}{s} = 20 \text{ Mbit} = 2.5 \cdot 10^6 \text{ bytes}$$

Por lo tanto, se necesitan 22 bits, ya que:

$$2^{22} = 4.194.304 > 2.500.000$$

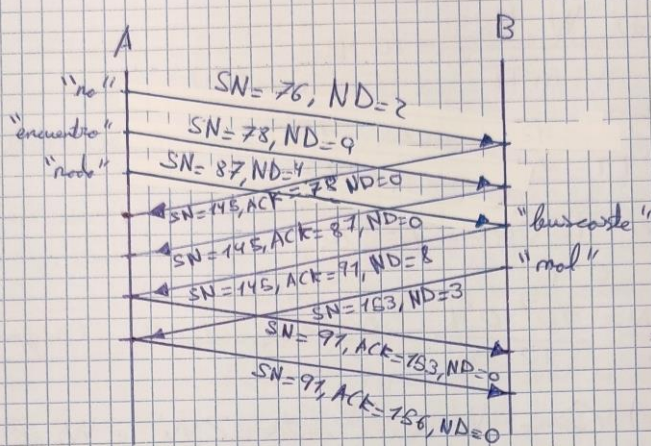
y

$$2^{21} = 2.097.152 < 2.500.000$$

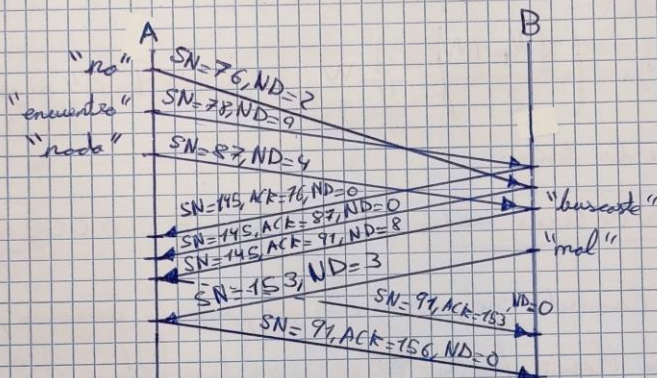
AW de 22 bits

6

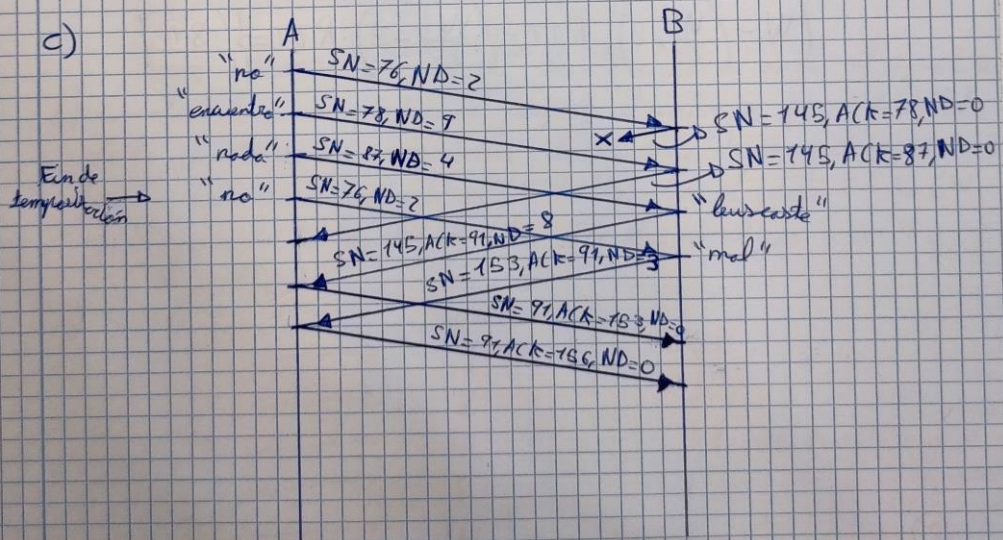
a)



b)



c)



⑦