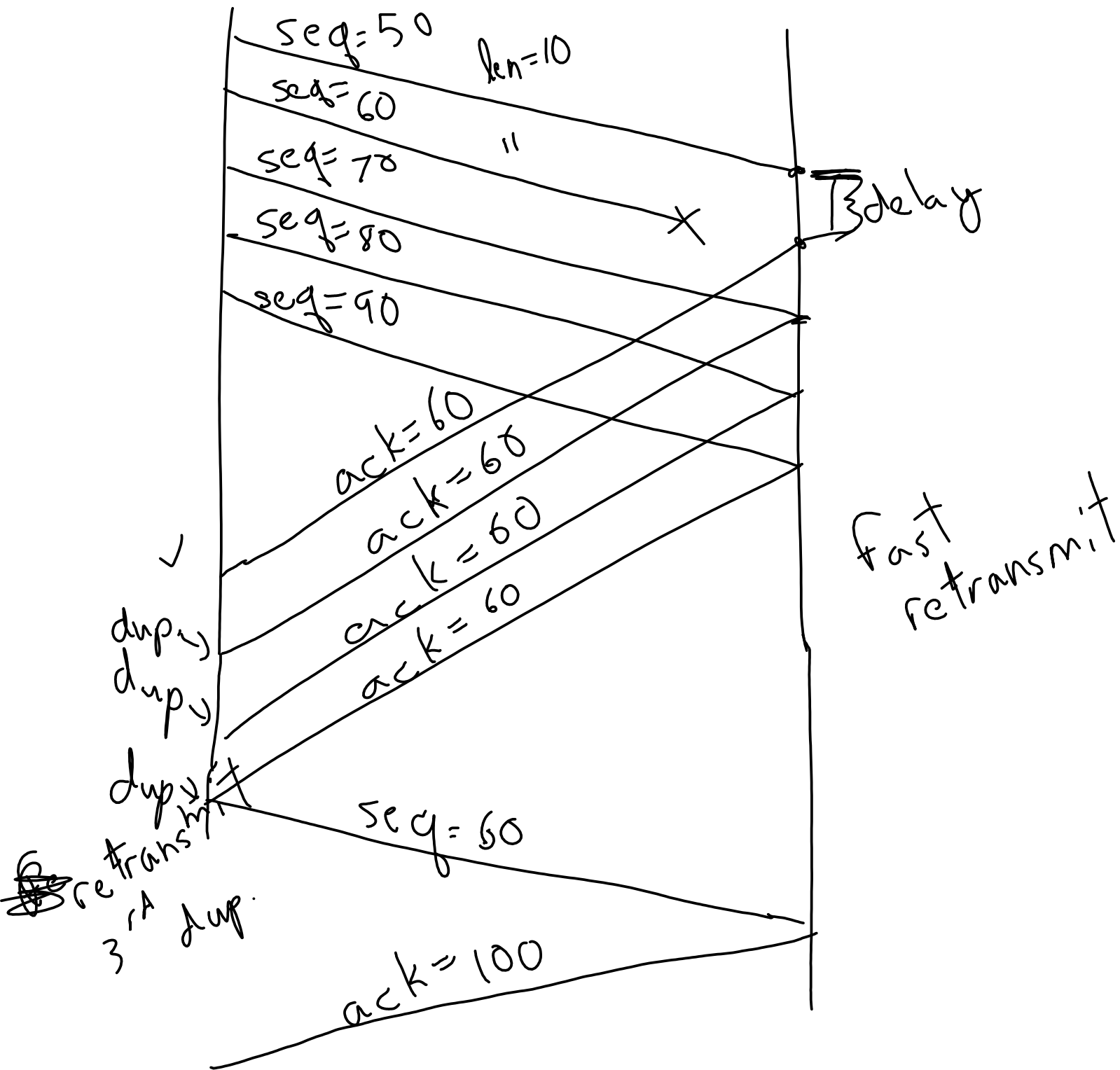
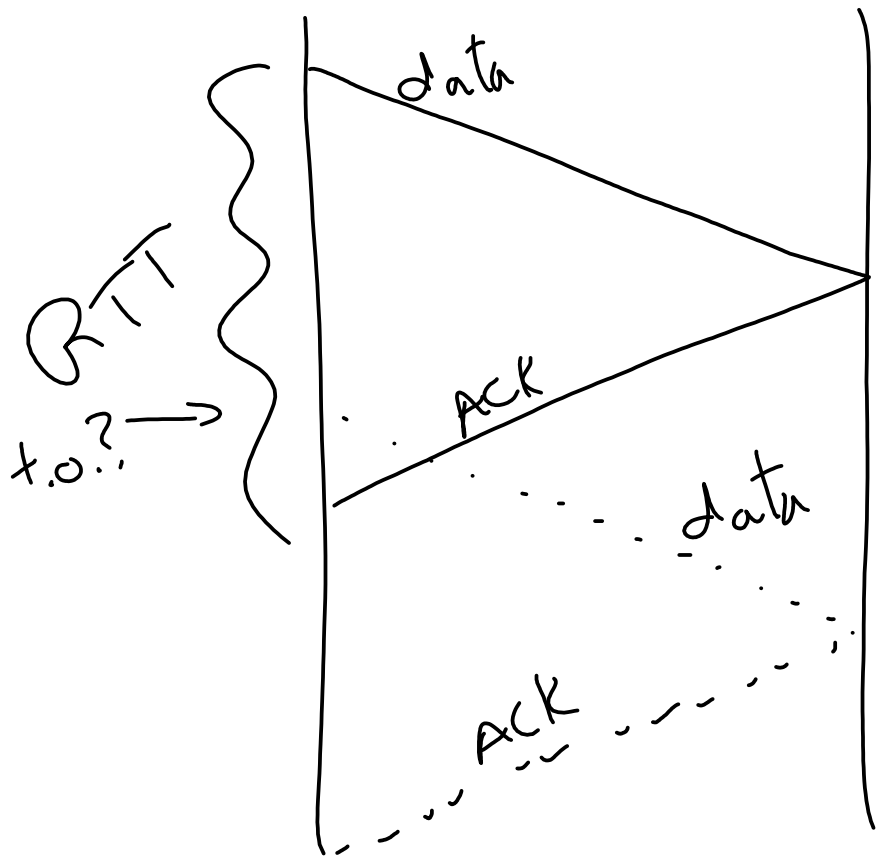


Alice

Bob





x.o. →

Estimated RTT (+)

$$= (1 - \alpha) * \text{EstimatedRTT} (+ - 1) + \alpha * \text{SampleRTT}$$

$$0 \leq \alpha \leq 1$$

$$0 \leq \beta \leq 1$$

$$\text{DevRTT} = (1 - \beta) * \text{DevRTT} + \beta * (|\text{SampleRTT} - \text{EstRTT}|)$$

---

$$\text{Timeout} = \text{EstRTT} + 4 * \text{DevRTT}$$

# Flow Control

rwnd field

(receiver window)

amount of buffer space  
available

---

Congestion Control: network

signs of congestion

- lost packets

- time outs

---

MSS: max segment size  
(largest packet)

Additive Increase

Multiplicative Decrease

add 1 MSS to comm.  
after each RTT

\* detect lost packet \*

cut amount in  $\frac{1}{2}$

