

$$F = 1 \text{ KB}$$

$$MSS = 100 \text{ B}$$

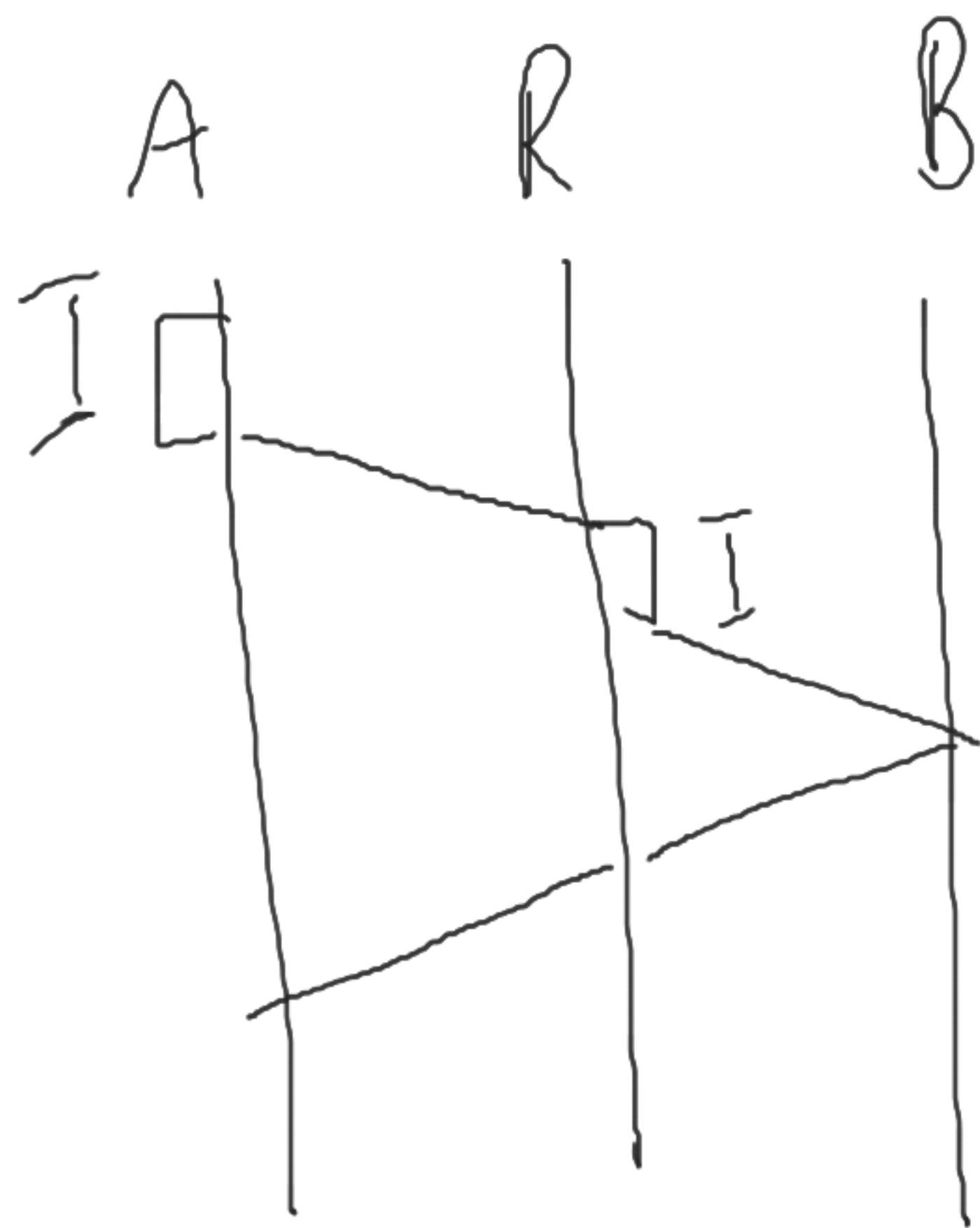
$$SSTH = 400 \text{ B}$$

$$RCWN = 4000 \text{ B}$$

$$\frac{W_{max} \cdot MSS}{RTT} = C_1$$

$$W_{max} = \frac{C_1 \cdot RTT}{MSS}$$

$$R_{TT} = \frac{MSS}{C_1} + 4\tau + \frac{MSS}{C_2} =$$



$$= \frac{100 \cdot 8^2}{40 \cdot 10^6} + \frac{100 \cdot 8}{80 \cdot 10^6} + 4 \cdot 10^{-6}$$

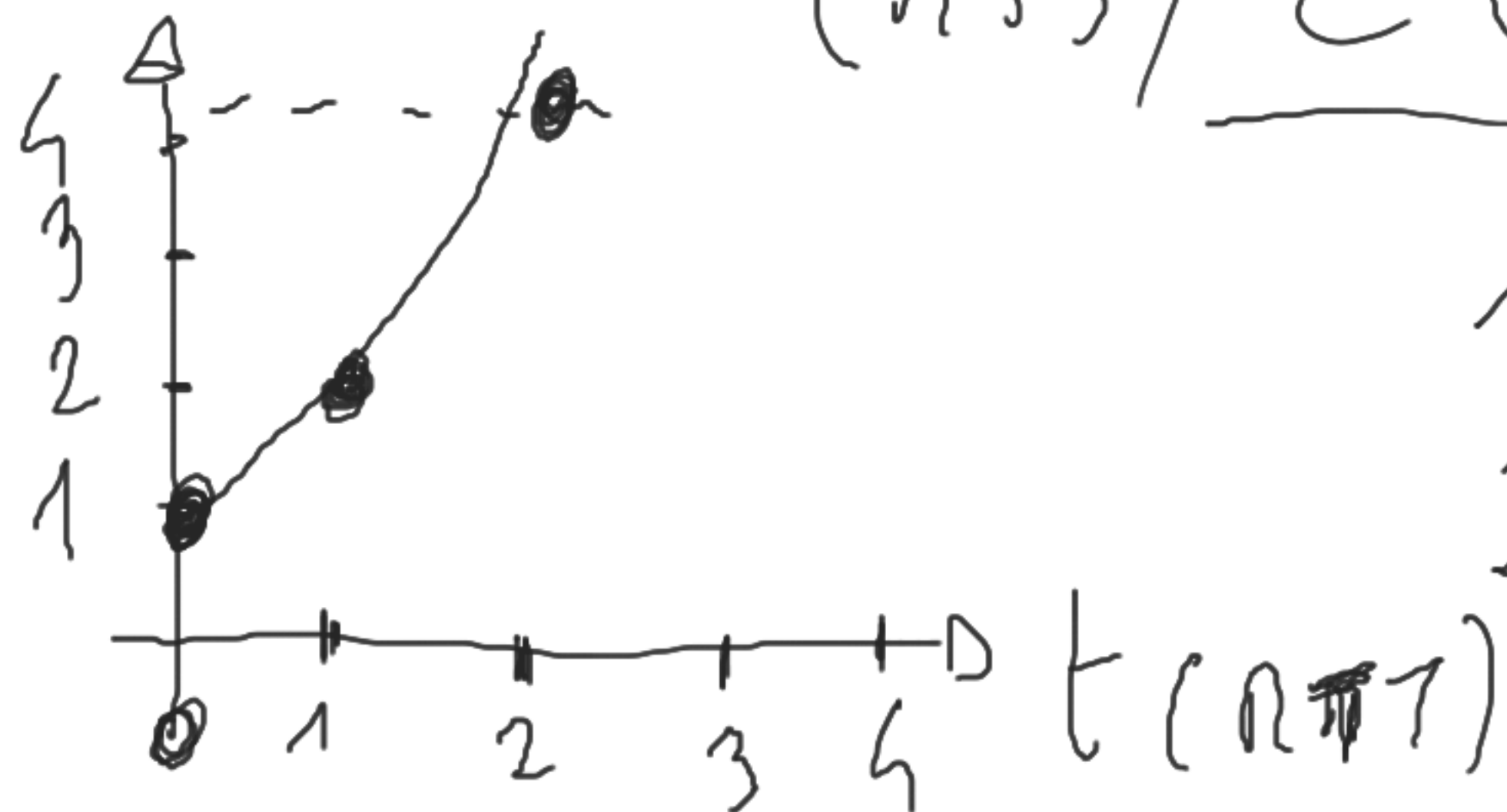
$$= 20 \mu s + 10 \mu s + 4 \mu s =$$

$$= 34 \mu s$$

$$W_{max} = \frac{C_1 \cdot RTT}{MSS} = \frac{4 \cdot 10^6 \cdot 3,4 \cdot 10^{-6}}{100 \cdot 8} =$$

$$= 1,7$$

CWND (MSS)



(MSS) CWND

Тіпів (RTT)

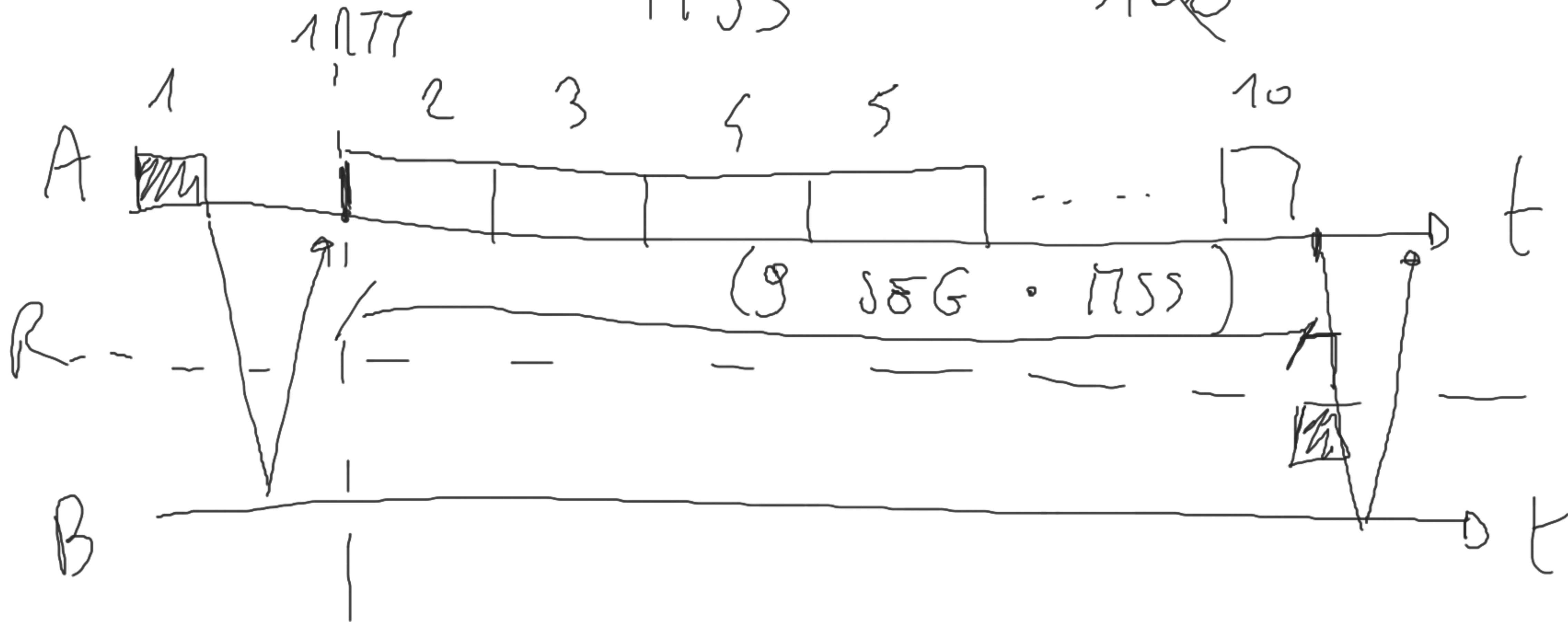
1

0

2

1

$$N_{SG} = \frac{F}{MSS} = \frac{1000}{100} = 10$$

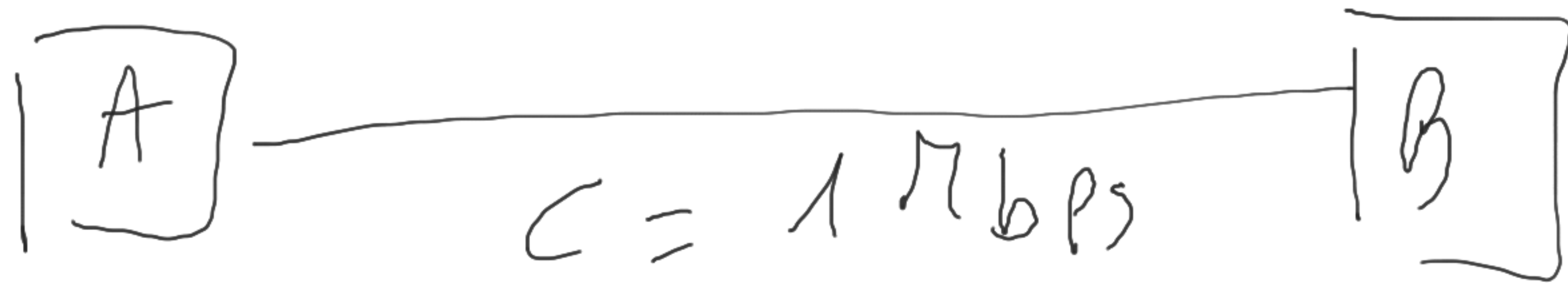


$$T_2 = RTT + \frac{9 \cdot 1755}{C_1} + 4 \mu =$$

$$+ \frac{1755}{C_2}$$

$$= 34 \mu + \frac{9 \cdot 100 \cdot \cancel{8}}{\cancel{5} 40 \cdot 10^6} + 4 \mu =$$

$$= 38 \mu + 180 \mu = 218 \mu s$$



$$C = 1 \text{ Mbps}$$

$$T = 3.1 \text{ ms}$$

$$MSS = 1000 \text{ bit}$$

$$SSTH = 5 \text{ MSS}$$

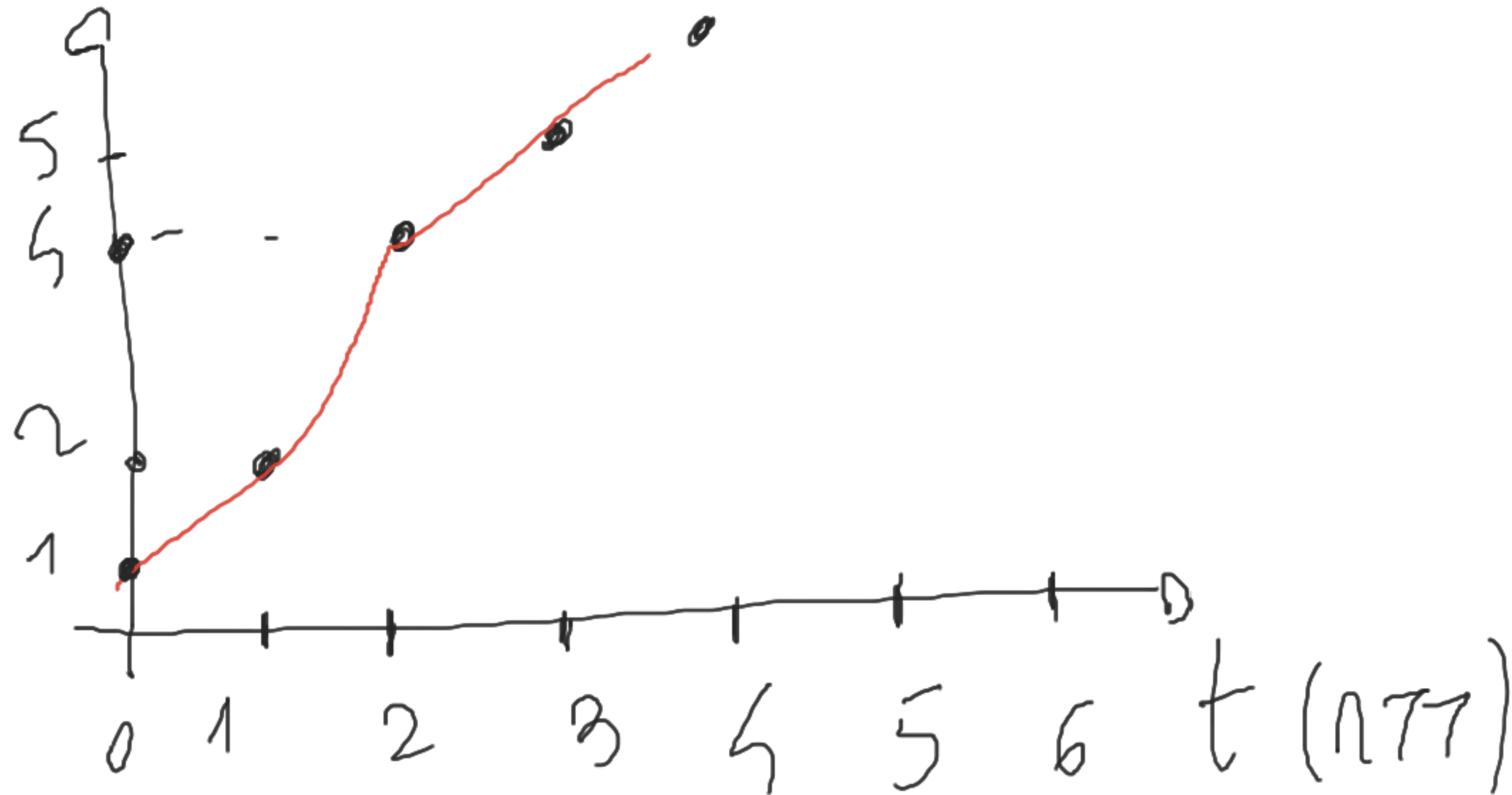
$$F = 100 \text{ MSS}$$

$$\frac{W \cdot MSS}{RTT} = C$$

$$RTT = \frac{MSS}{C} + 2T = 7.2 \text{ ms}$$

$$W = \frac{RTT \cdot C}{MSS} = \text{7, 2} \Rightarrow 8$$

CWND (MSS)



CWND	t
1	0
2	1
4	2
5	3
6	4
7	5

$$\boxed{C_{\text{WND}} = 8 \text{ MSS} \quad , \quad T = 6 \text{ RTT}}$$

$$\Delta F = F - 25 = 100 - 25 =$$

$$= 75 \text{ MSS}$$

$$T_{\text{TOT}} = 5 \text{ RTT} + \frac{75 \text{ MSS}}{C} + 2 \tau$$



$$MSS = 500 \text{ B}$$

$$RTT = 500 \text{ ms}$$

$$RTO = 2 RTT$$

$$F = 39,5 \text{ KB}$$

$$RCWND^0 = 12 \text{ KB}$$

$$SSTH^0 = 8 \text{ KB}$$

$$C \cdot WND^0 = 500 \text{ B}$$

$$t_1 = 3 \text{ s} \quad \text{CONGESTION}$$

$$RCWND^0 = \frac{12 \cdot 40^3}{0,5 \cdot 10^3} = 24$$

$$SSTH^0 = \frac{8 \cdot 15^3}{0,5 \cdot 10^3} = 16$$

$$C \cdot WND^0 = 1$$

$$t_1 = \frac{3}{0,5} = 6$$

$$t_2 = \frac{4,5}{0,5} = 9$$

$$t_2 \Rightarrow RCWND = 2 \text{ KB}$$

