$$W = \frac{3 \cdot 20}{20+100} = \frac{60}{120} = \frac{1}{2} = 0{,}5$$

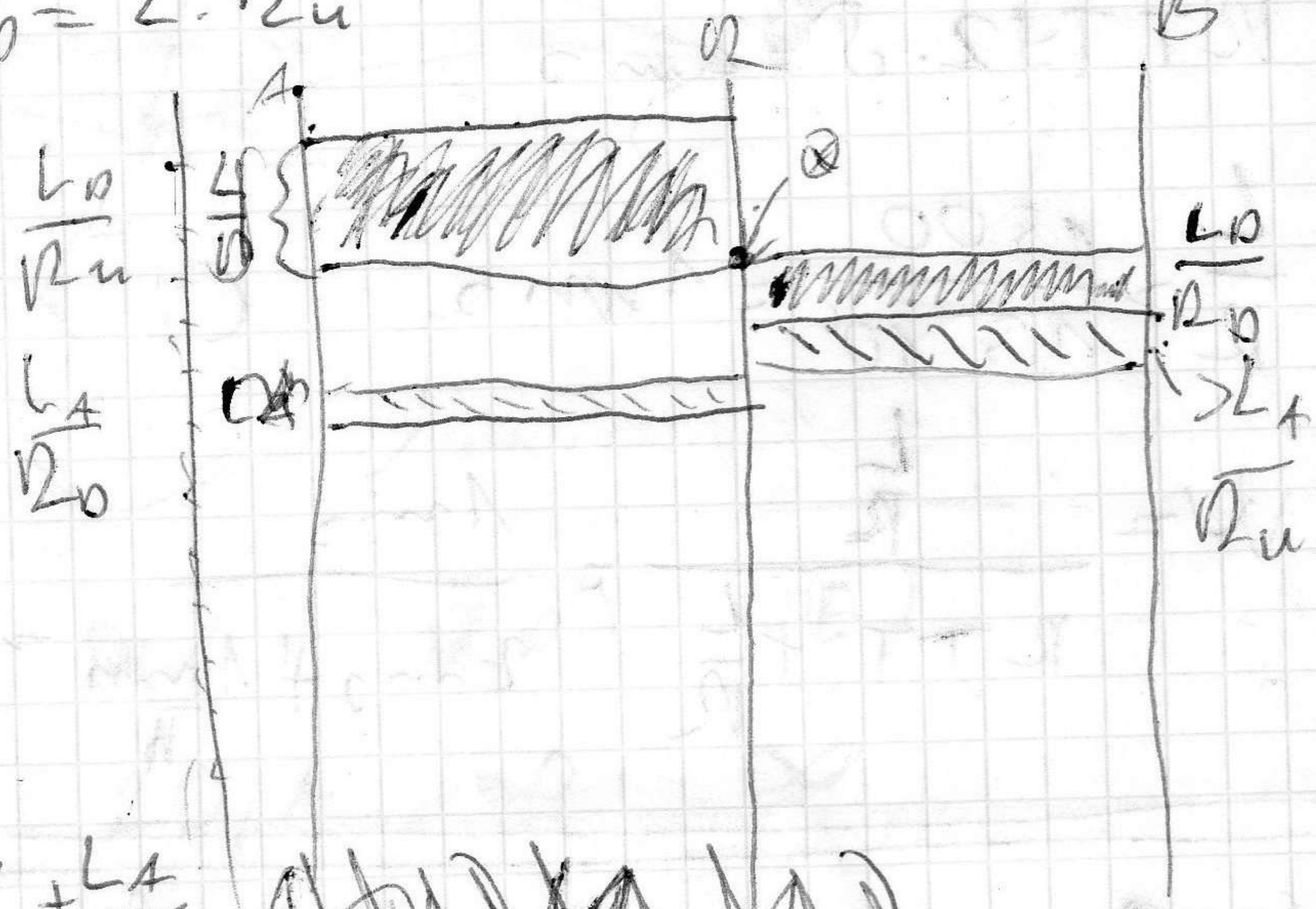
- Telefonpróbás idő és Szabadulási idő = 0
- Jelterjedési sebesség végtelen ∞ (*)

L_D = 1250 bájt

L_A = 25 bájt

Felületi sebesség R_u = 300 kbit/s

Felületi sebesség $R_D = 2 \cdot R_u$



$$RTT = \frac{L_D}{R_u} + \frac{L_D}{R_D} + \frac{L_A}{R_u} + \frac{L_A}{R_D} = L_D + L_A + R_u + R_D$$

$$\frac{L_A}{R_u} \left(\frac{1}{R_u} + \frac{1}{R_D} \right) + \frac{L_D}{R_D}$$

4400 : 0000 : 0016 : 0192 : 0000 : 0000 : 9000 : 000B

4400 : 0 : 16 : A92 : 4000 : B

15.0 : 2.1 → FF00 : 0201

FF

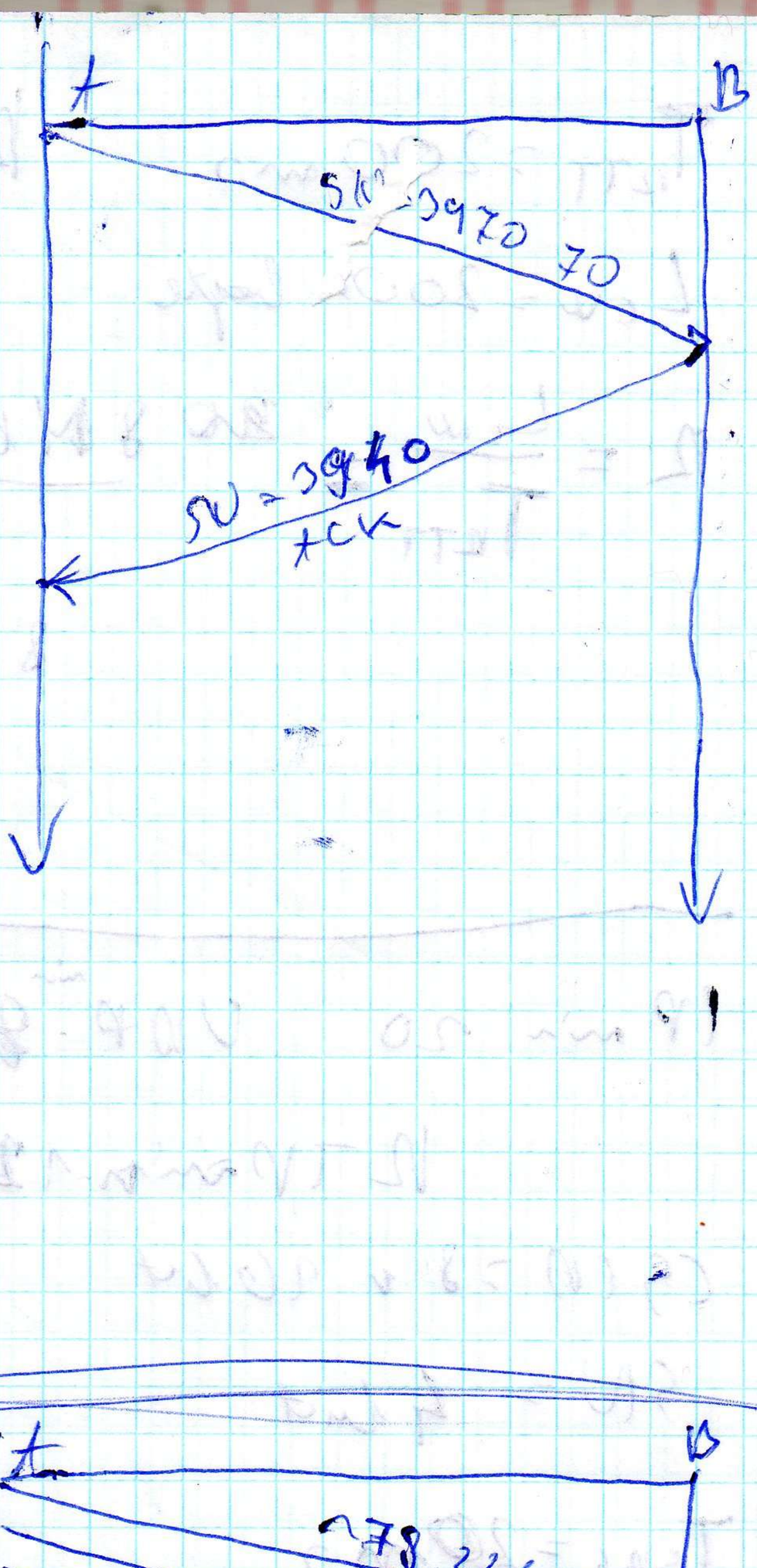
0000 : 0000 : 0000 : 0000 : 0000 : 0000 : FF00 : 0201

$SN_x = 3970$

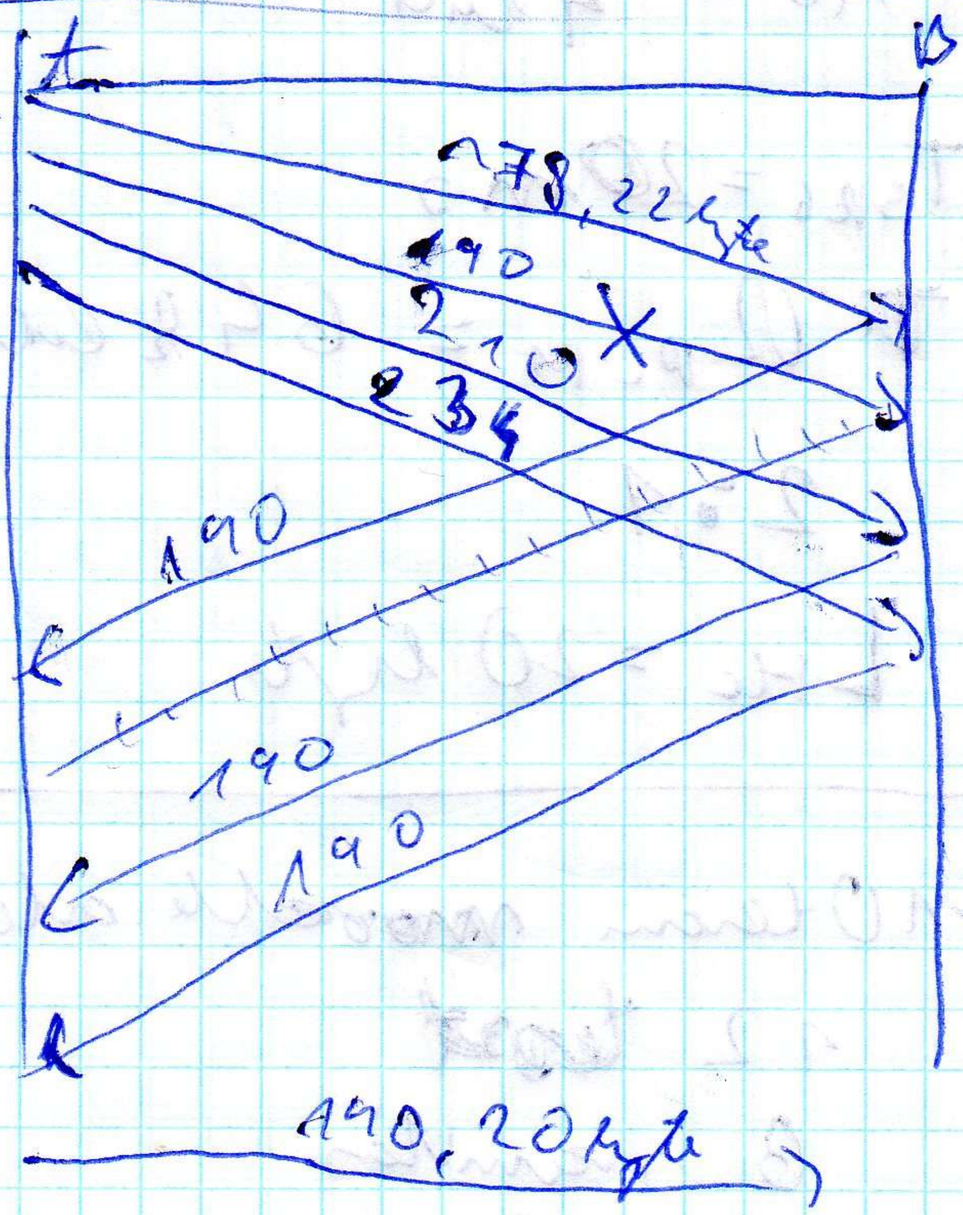
$L_A = 70$ byte

$SN_B = 3740$

$L = 500$ byte



3970 = 4040
3740
0300
-300 - 300
↓
200 byte



$T_{RTT} = 200\ ms$ $\quad R_{MC} = ?$

$L_{CW} = 200$ byte

$R = \frac{L_{CW}}{T_{RTT}} = \frac{200\ 8\ Mbit}{0}$

$\frac{8\ Mbit}{2} = 4\ Mbit$

IP min 20 UDP min 8 byte

RTP min 12 byte

CSID = 3 x 20 bit

SN = 4 bit

$T_{SRC} = 20\ ms$

$R_{PCM} = 64\ kbit/s$ > 160 byte

2:1

$L_{HC} = 20$ byte

RTP
+
20
180

---

10 term mozzalle átlegyjen

12 test

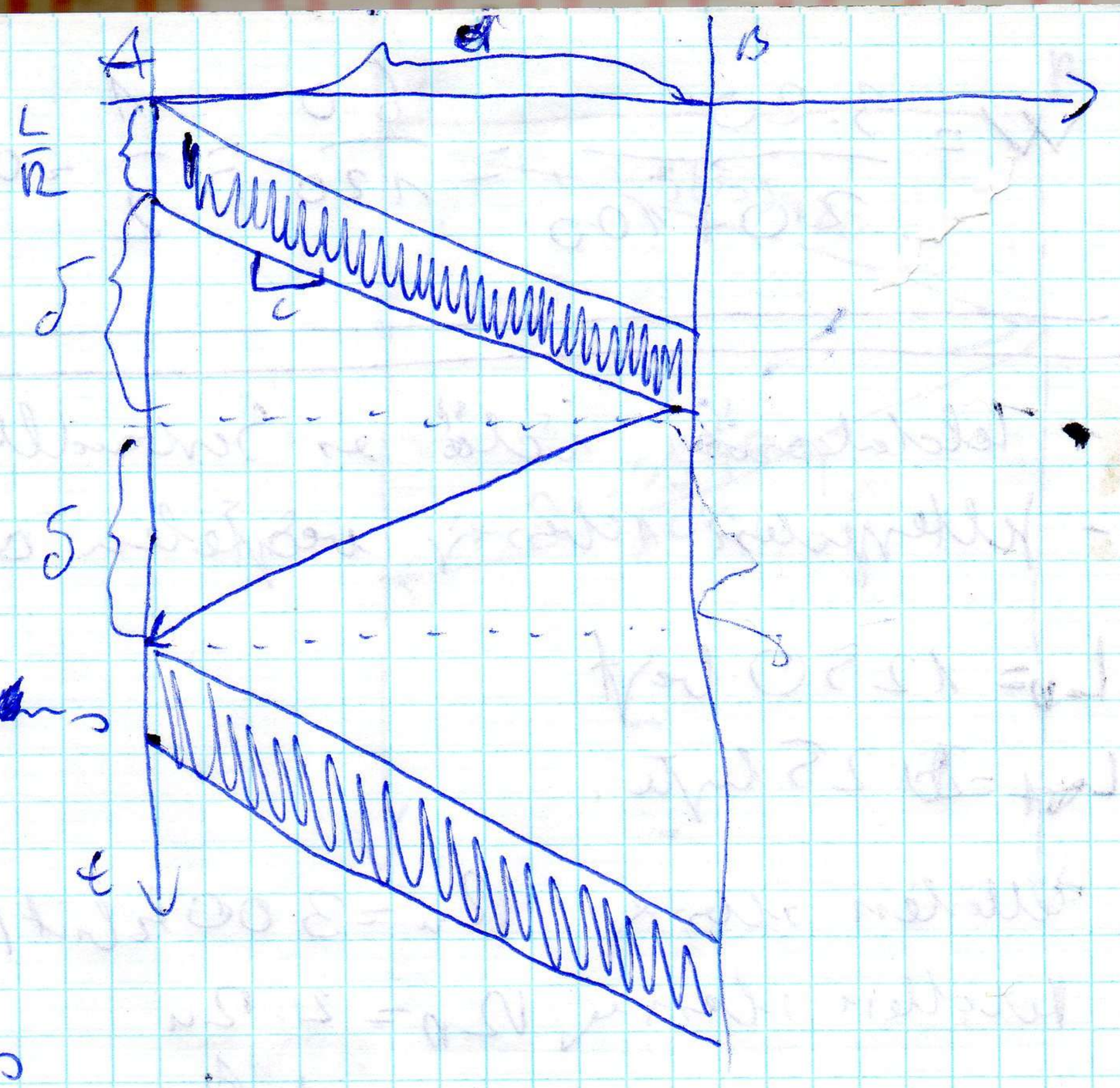
6 számítás

$L = 1500$ бит

$R = 1{,}5$ Мбит/с

$d = 200$ км

$c = 2 \cdot 10^5 \frac{км}{с}$



$\delta = \frac{d}{c} = \frac{200}{200000} = 1$ мс

$RTT = 2 \cdot \delta = 2$ мс

$\frac{L}{R} = \frac{1500}{1{,}5 \cdot 10^6} = 1$ мс

$W = \frac{\frac{L}{R}}{RTT + \frac{L}{R}} = \frac{1\text{мс}}{2\text{мс} + 1\text{мс}} = \frac{1}{3}$

$S = 3$

$RTT = 100$ мс

$L = 100$ бит

$R = 5$ кбит/с

$W = \frac{3 \cdot \frac{L}{R}}{RTT + \frac{L}{R}}$

$\frac{L}{R} = \frac{100}{5000}\text{с} = 0{,}02\text{с} = 20$ мс