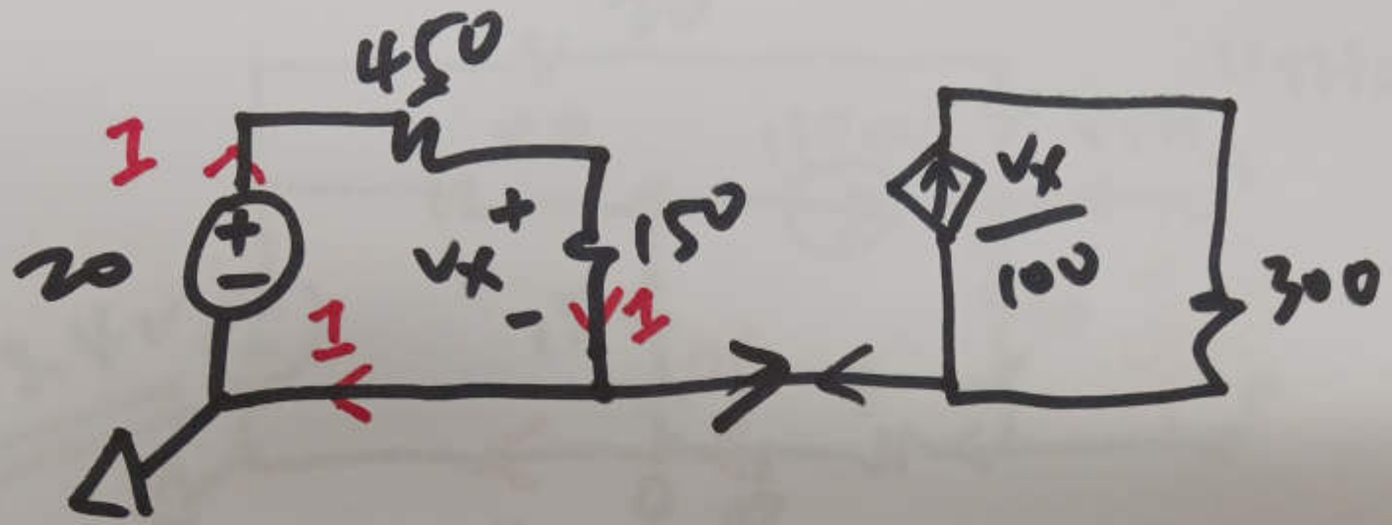
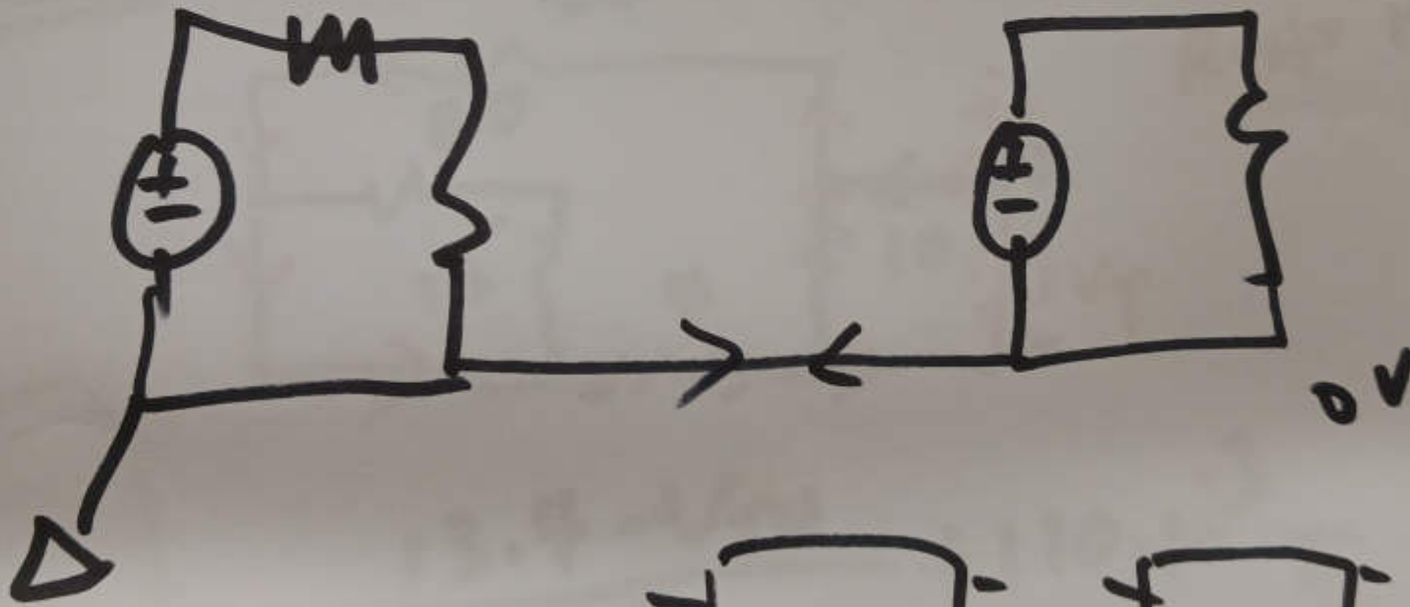
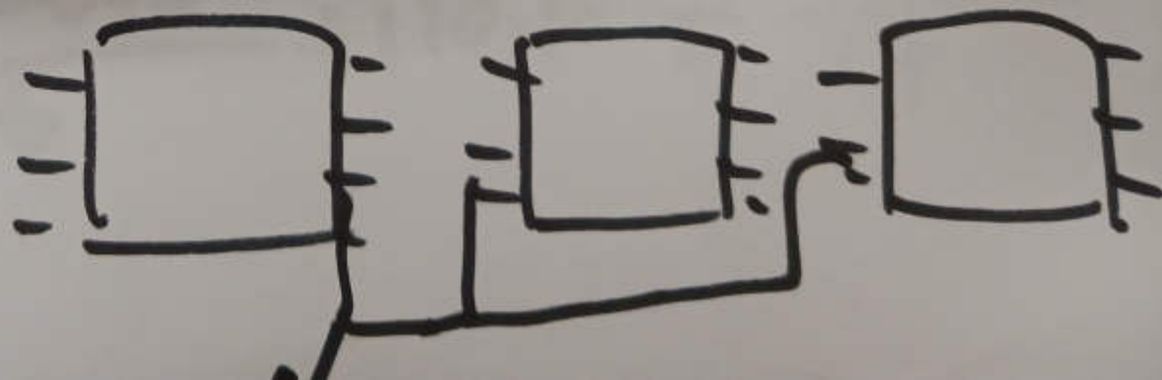
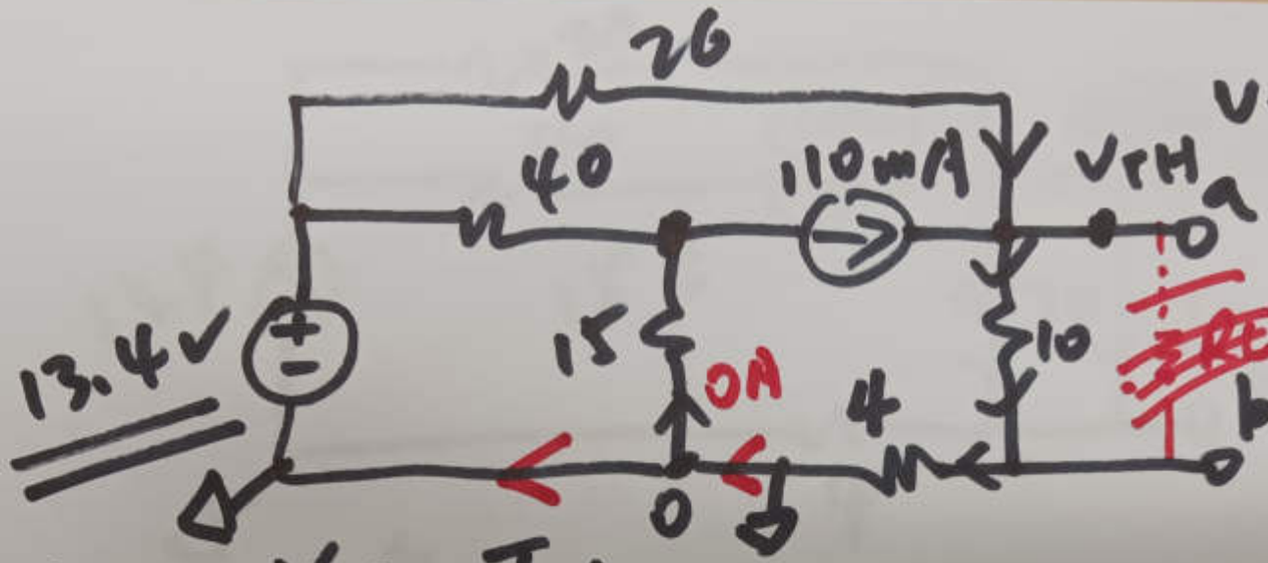

450
1
20
+
-
+
Vx
-
150
1
Vx
100
300

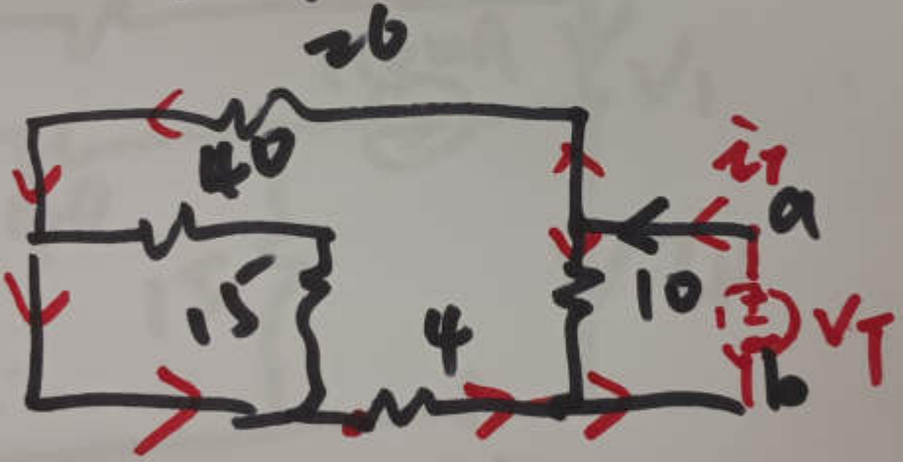

0V





$V_{TH} = V_{oc}$ open circuit

R_{TH}, V_{TH}, I_N

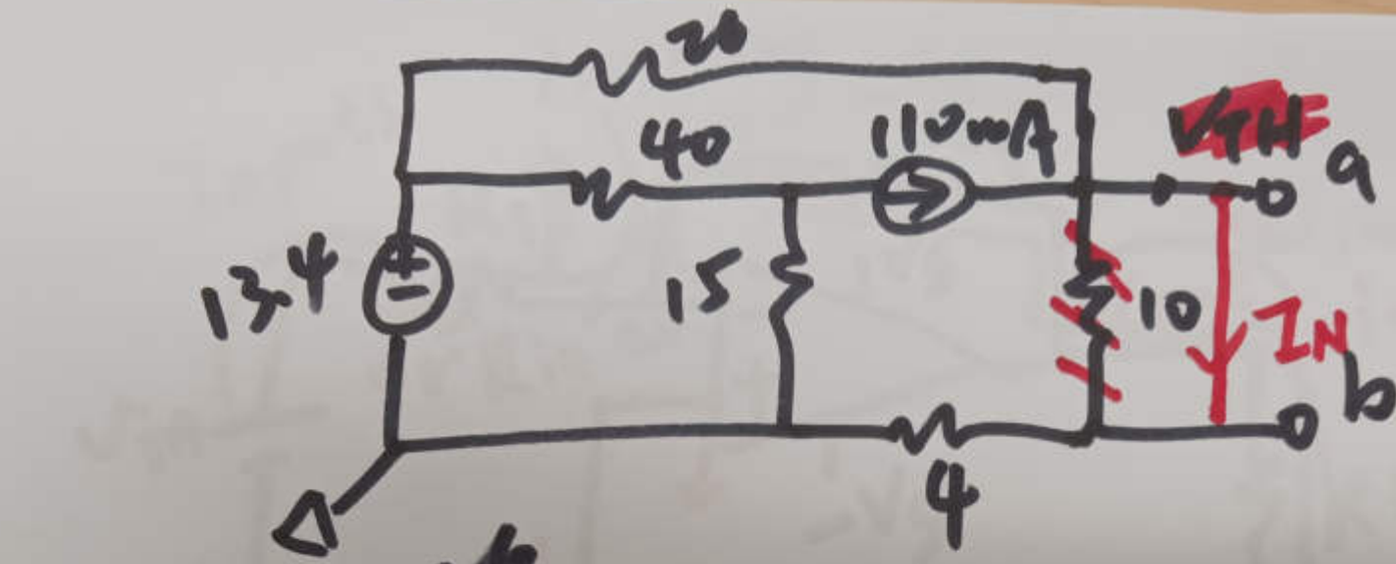


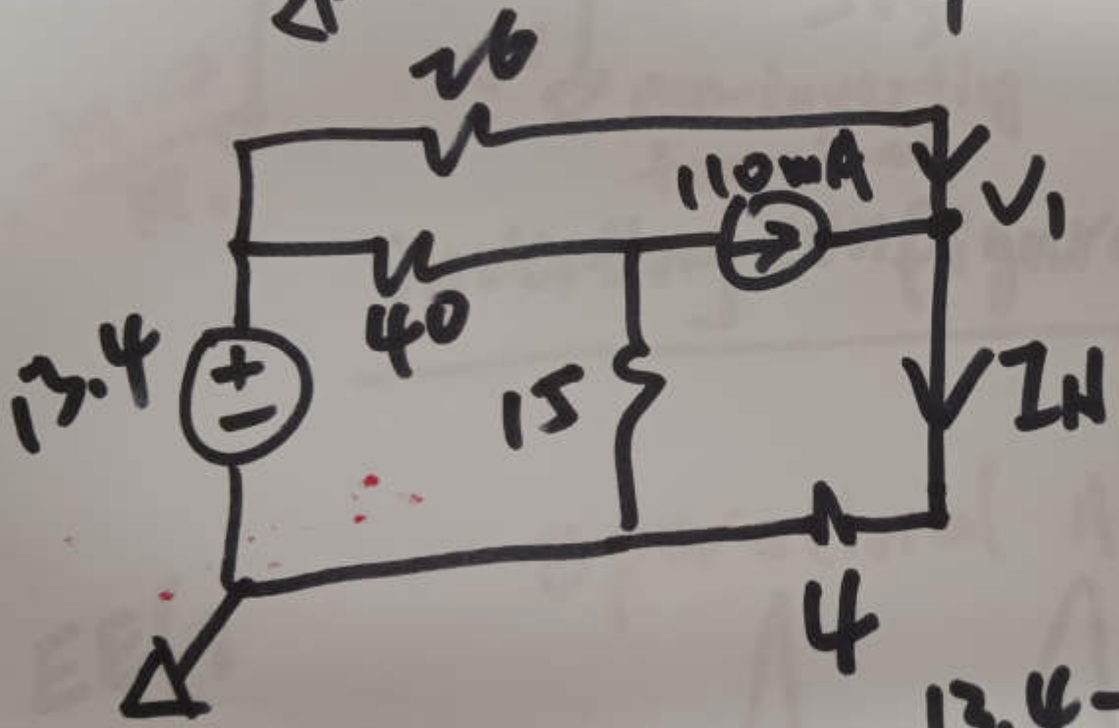
$R_{TH} = 10 \,||\, (26+4)$

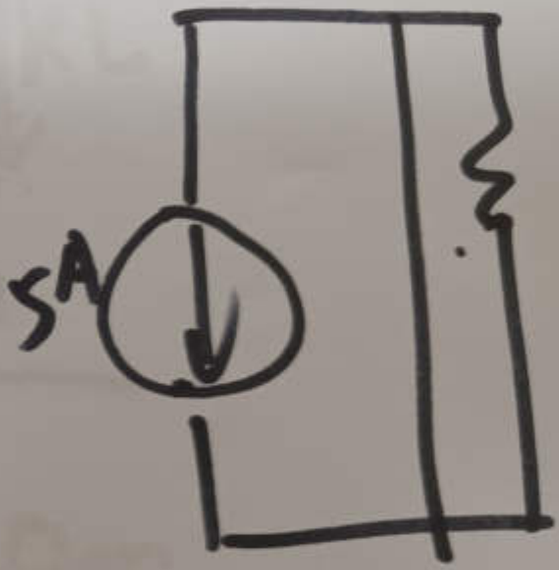
$$I_N = \frac{V_{TH}}{R_{TH}}$$

$R_{TH} = R_N$

$$\frac{13.4 - V_{TH}}{26} + 110 \cdot 10^{-3} = \frac{V_{TH}}{14}$$



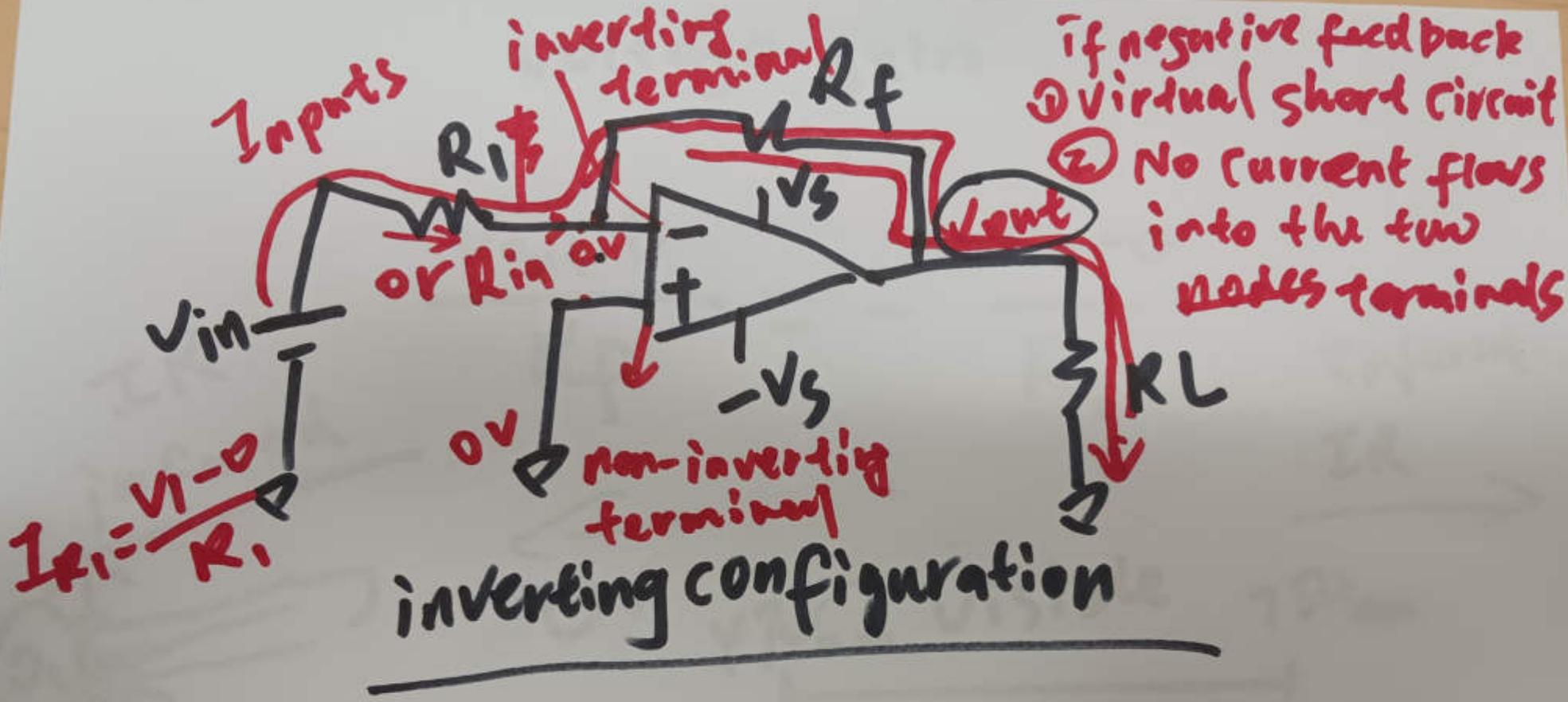




$$\frac{13.4 - V_1}{26} + 110.10^{-3} = \frac{V_1}{4}$$

$$I_N = \frac{V_1}{4}$$

(3)



If negative feedback
① Virtual short circuit
② No current flows into the two nodes terminals

inverting configuration

Operational Amplifier

EEG

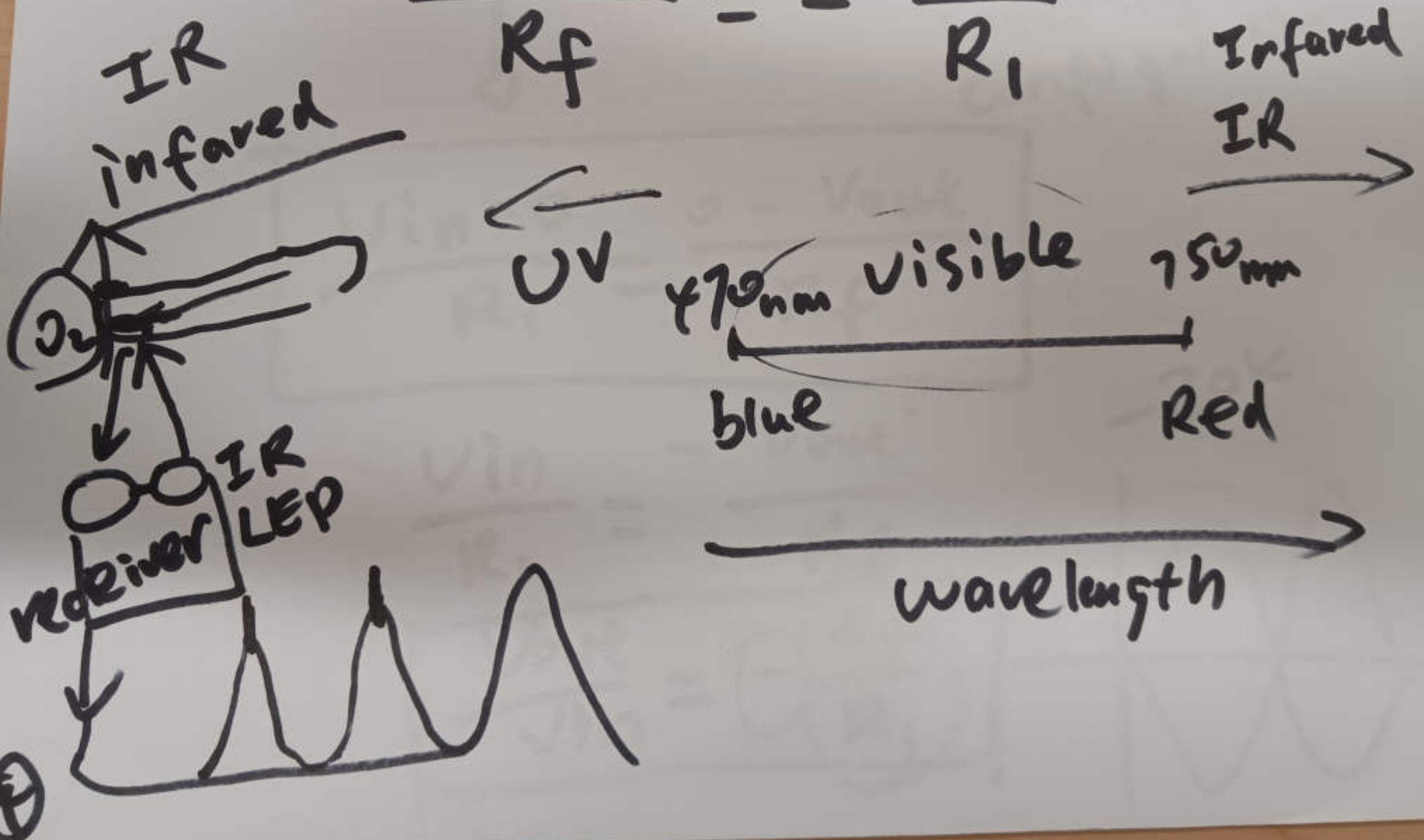
EMG

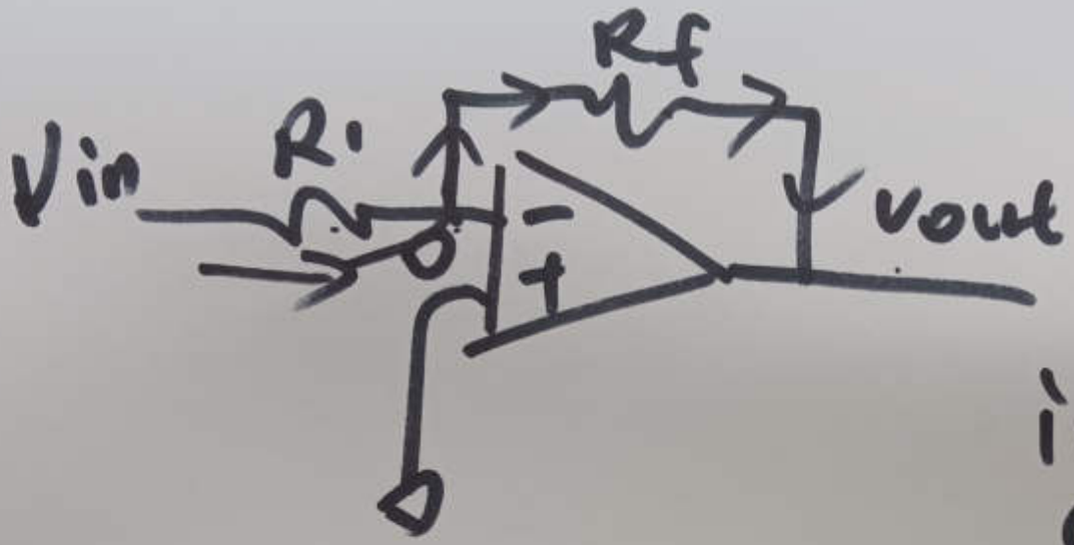
ECG

EKG

voltage gain

$$\frac{V_{out}-0}{R_f} = -\frac{V_{in}-0}{R_1}$$





inverting configuration

$$\frac{V_{in} - 0}{R_1} = \frac{0 - V_{out}}{R_f}$$

$$\frac{V_{in}}{R_1} = -\frac{V_{out}}{R_f}$$

$$\frac{V_{out}}{V_{in}} = -\frac{R_f}{R_1}$$

-20K