(1) [illegible]

$V_{ref} = \frac{R_2}{R_2 + R_{ph}} \cdot V_{cc}$ — $V_{ref} = 0{,}833\ V$; $V_{ref} = 0{,}24\ V$

détecteur de lumière — f = 1 H / f = 3 H — 0,83 / 0,24

filtrage: filtre P H, coupe 0,5V — 0,3V / −0,3V

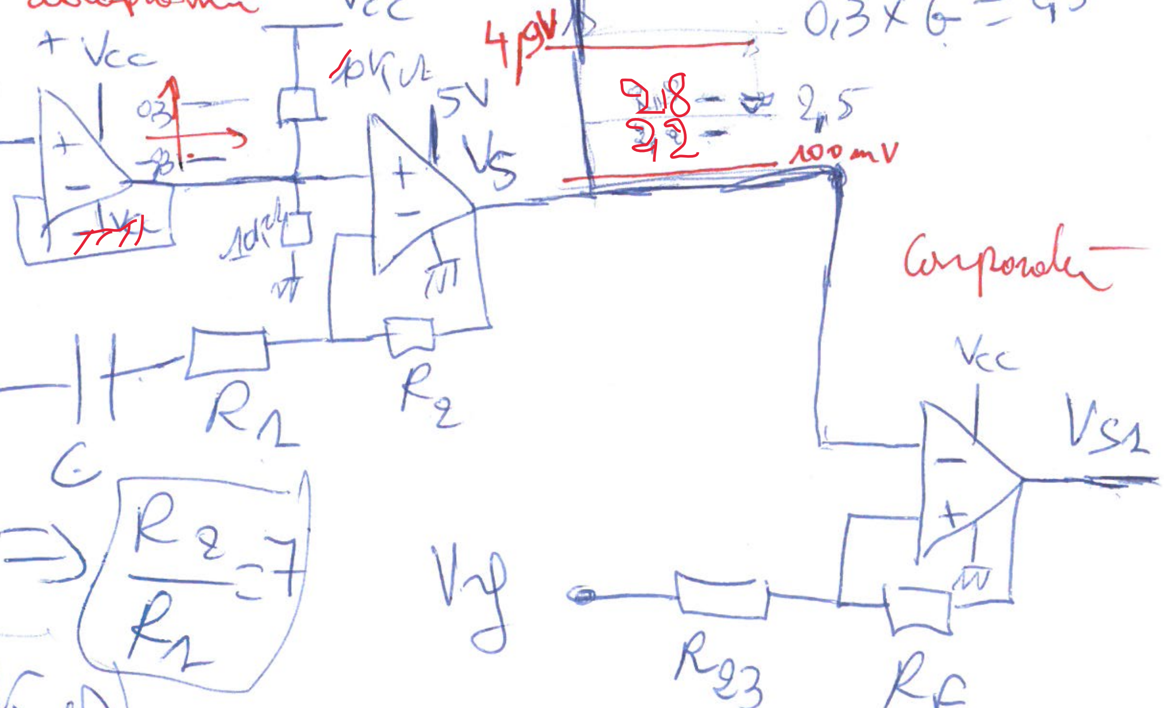
adaptation: + Vcc

Amplification: Vcc, 5V, Vs, 4,9V

$\Rightarrow G = 8$

$0{,}3 \times G = 2{,}5$

comparateur



$f_c = 0{,}1\ Hz$

$f_c = \frac{1}{2\pi RC}$ = 0,1

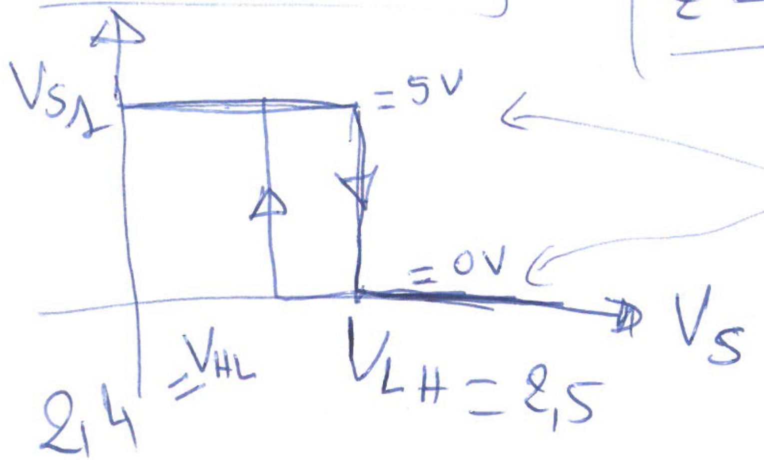
$RC = \frac{1}{2\pi \times 0{,}1}$

$RC = 1{,}6$

R = 100 kΩ
C = [illegible] F

$G = 8 \Rightarrow \left(1 + \frac{R_2}{R_1}\right) = 8 \Rightarrow \frac{R_2}{R_1} = 7$

$R_1 = 10\ k\Omega \Rightarrow R_2 = 70\ k\Omega$



$\Delta V = V_{LH} - V_{HL} = 100\ mV$

$V_{HL} = 5 \cdot \frac{R_{23}}{R_{23} + R_f} + V_g \left(\frac{R_f}{R_f + R_{23}}\right)$

$V_{LH} = 0 \times \frac{R_{23}}{R_{23} + R_f} + V_g \left(\frac{R_f}{R_f + R_{23}}\right)$

$\Delta V = 5 \times \frac{R_{23}}{R_{23} + R_f} = 100\ mV$

$V_g = 2{,}44\ V$

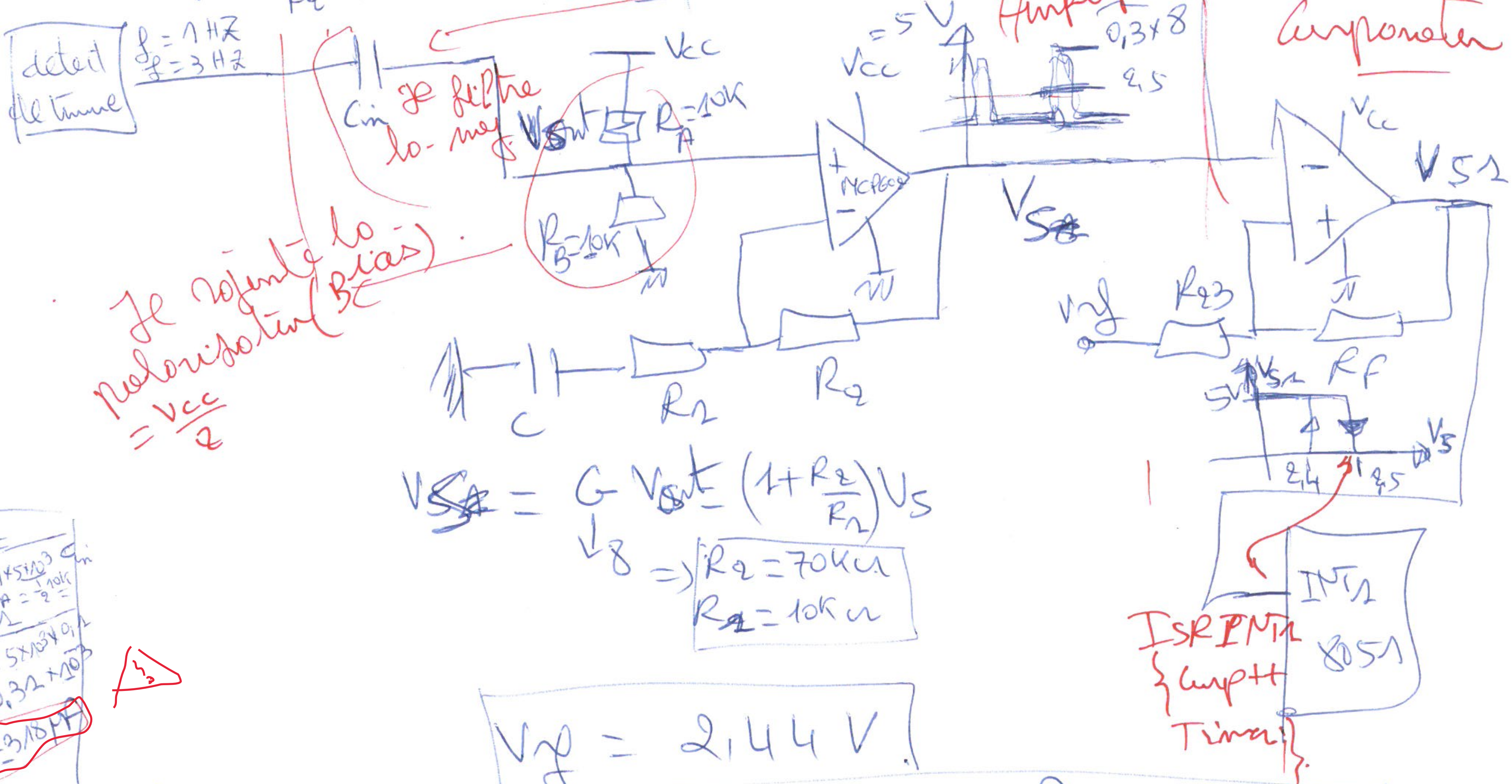
$R_{23} = 10\ k\Omega$

$R_f = 490\ k\Omega$

② solution

$V_{nt} = \frac{R_2}{R_2 + R_{ph}} \cdot V_{CC}$ < 0,83 V / 0,24 V

ampl = 0,5 V



Je rajoute la polarisation (Bias) $= \frac{V_{CC}}{2}$

$V_{S8} = G\, V_{out} = \left(1 + \frac{R_2}{R_1}\right) V_S$

$G = 8$ ⟹ $R_2 = 70K\Omega$, $R_1 = 10K\Omega$

$f_{cm} = \frac{1}{2\pi \times 5 \times 10^3\, C_{in}}$

$R_A = \frac{10K}{2}$

$C_m = \frac{1}{2\pi\, 5 \times 10^3 \times 0,1}$

$C_{in} = 0,32 \times 10^{-3}$

$C_m = 3,18\ \mu F$

il faut prendre $R_A = R_B = 100K$ ⟹ $C_m = 31\ \mu F$

$V_{ref} = 2,44\ V$

$R_{23} = 10K\Omega$ et $R_f = 490K\Omega$

Solution plus complexe car il faut que C_{in} avec Z_e = filtre passe haut @ $f_c = 0,1\ Hz$ ⟹

$f_c = \frac{1}{2\pi\, \frac{R_A}{2} C_{in}}$ ⟶ $C_{in} = 31\ \mu F$, $R_A = 100K\Omega$