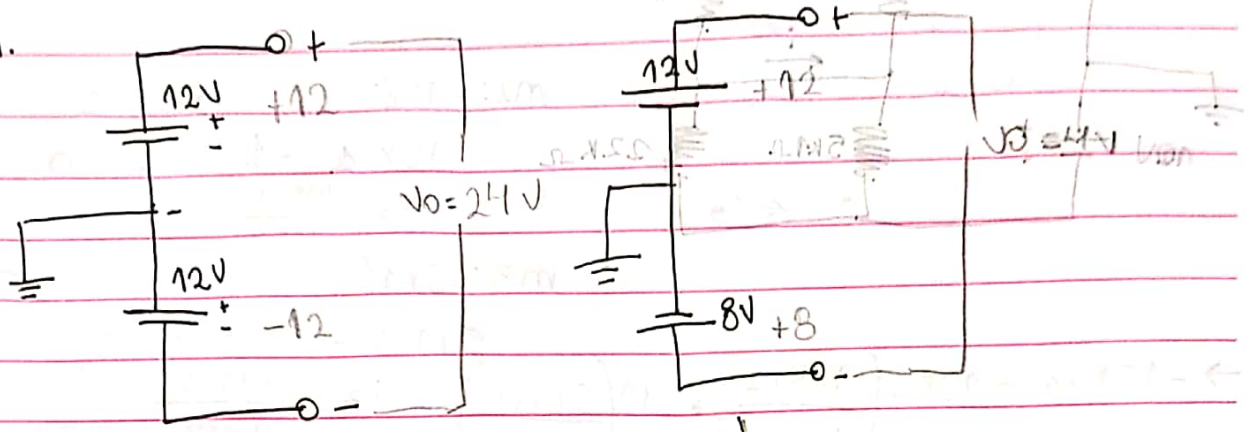
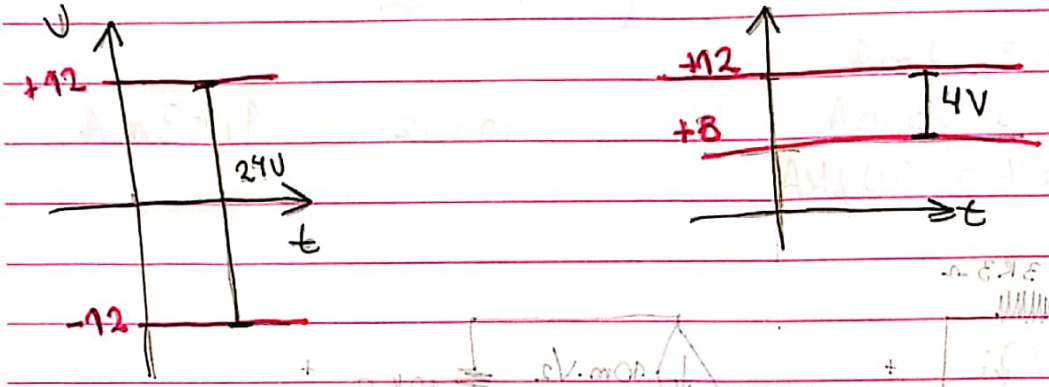
Rafaela Candia Souza 11/11/20

Eletrônica 1

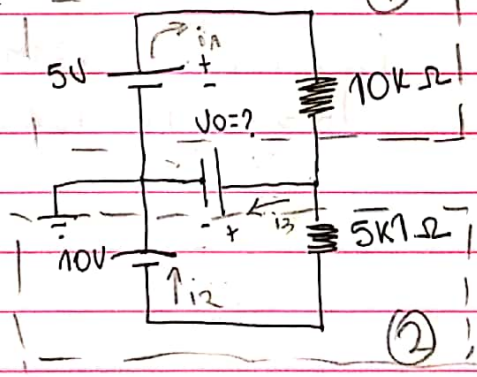
Atividade 1

1.





2.



i1 = 5/10K = 500μA

i2 = 10/5KΩ = 1,96mA

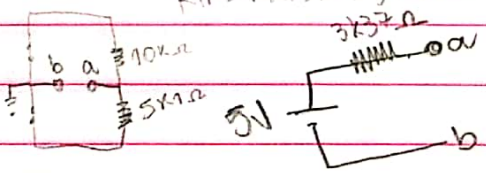
① : 5V + 10K x 500μA = 10V

② −10 + 5KΩ x 1,96mA = −4V

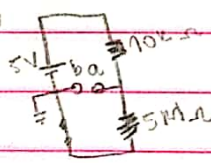
∴ Vo = 10 − 4 = 6V

Vth:

Rth = 10kΩ // 5KΩ = 3K37Ω



1º)

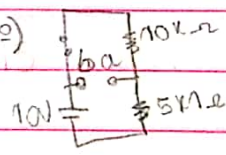


5 = 15KΩ i

i = 332,12μA

Vab = 5 + 10K i = 8,3V

2º)



10 = 15KΩ i

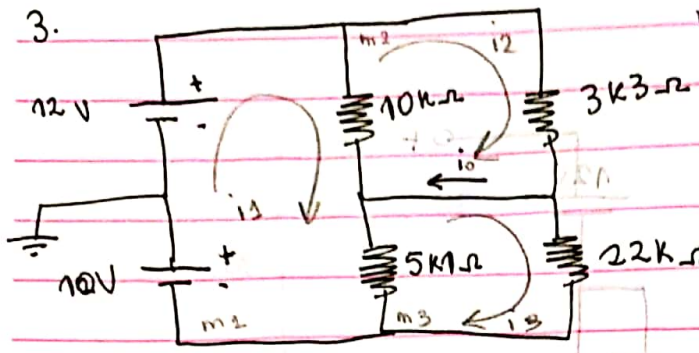
i = 662,25μ

Vab = −13,37V

Vth = −13,37 + 8,3V = −5V

credeal

3.



m1: $10i_2 - 10k(i_2 - i_3) - 5k(i_1 - i_3) = 0$

$-15k i_1 + 10k i_2 + 5k i_3 = -22$

m2: $-10k(i_2 - i_1) - 3k3 i_2 = 0$

$10k i_1 - 13k3\, i_2 = 0$

$i_2 = \frac{10k i_1}{13k3}$

m3: $-5k(i_3 - i_1) + 22k i_3 = 0$

$5k i_1 - 27k i_3 = 0$

$i_3 = \frac{5k i_1}{27k}$

$\rightarrow -15k i_1 + 10k \times \left(\frac{10k i_1}{13k3}\right) + 5k\left(\frac{5k i_1}{27k}\right) = -22$

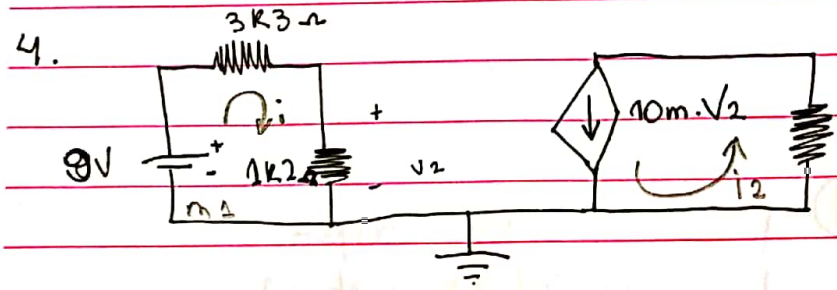
$i_1 = 3{,}37\,mA$

$i_2 = 2{,}53\,mA$

$i_3 = 634{,}20\,\mu A$

$i_o = i_2 - i_3 = 1{,}89\,mA$

4.



$9 = (3k3 + 1k2)\, i$

$i = 9/4k5 = 2mA$

$V2 = 1k2 \times 2mA = 2{,}4V$

$i_2 = 10m \cdot 2{,}4 = 24mA$

$VR3 = 24m \times 10k = 24V$

credeal