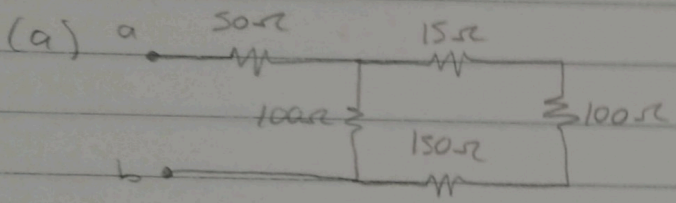
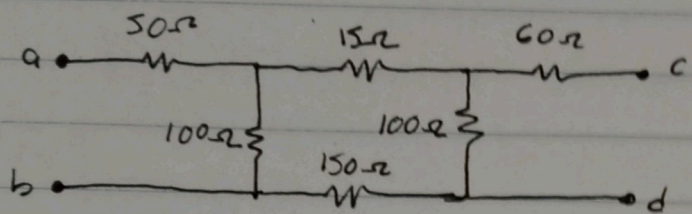
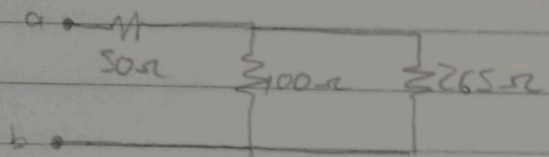


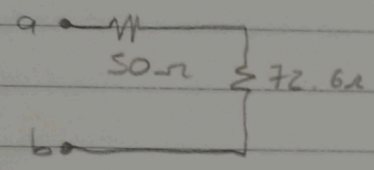
1. Encuentra la resistencia equivalente en las terminales: (a) a-b y (b) c-d.



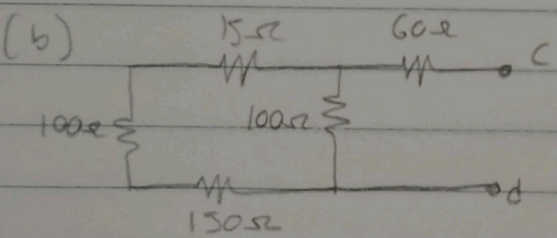
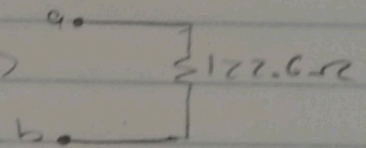
Se re 15, 100, 150 = 265Ω



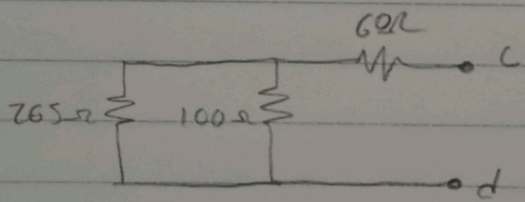
$100 \parallel 265 = \frac{(100)(265)}{100+265} = 72.6\Omega$



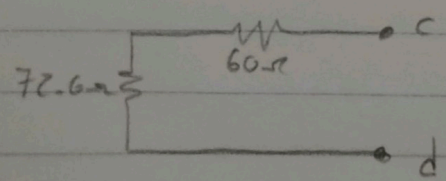
Se re 50, 72.6 = 122.6Ω =>



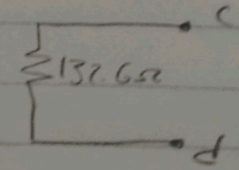
Se re 100, 15, 150 = 265Ω



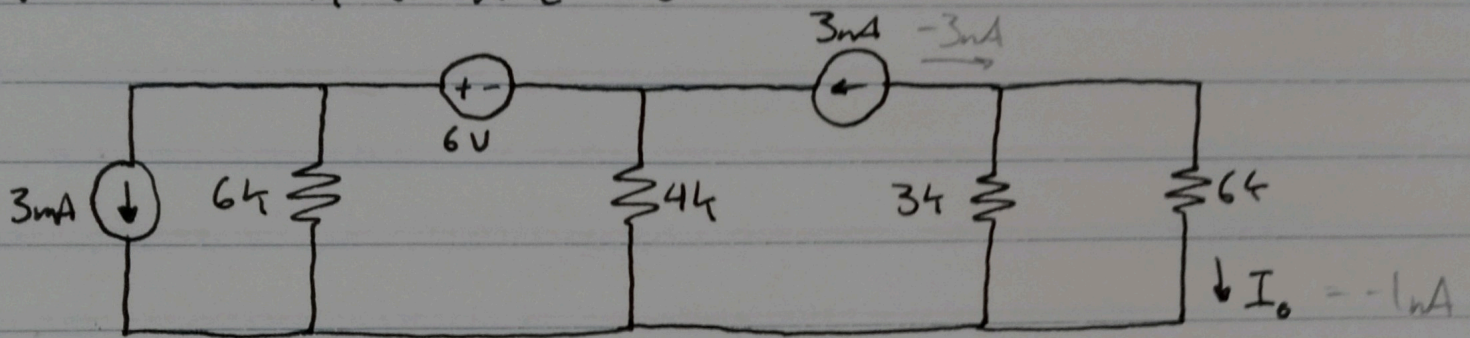
$265 \parallel 100 = \frac{(265)(100)}{265+100} = 72.6\Omega$



Se re 72.6 + 60 = 132.6Ω =>



2. Encuentra la corriente  $I_o$ .

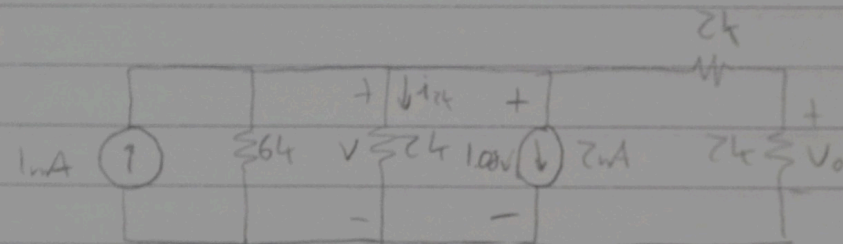
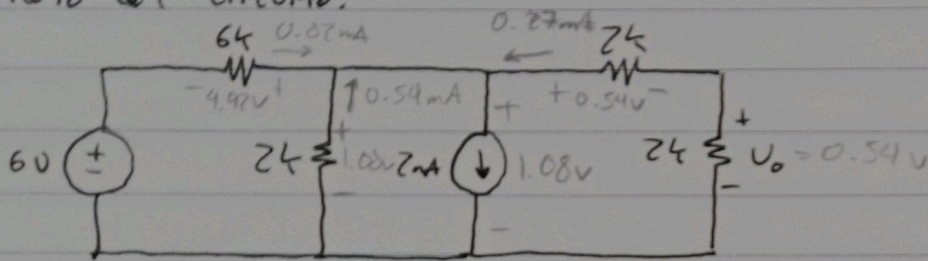


Por divisor de corriente

$$I_o = \frac{-3\text{mA}(3\text{k})}{3\text{k} + 6\text{k}} = \frac{-9}{9\text{k}} = -1\text{mA}$$

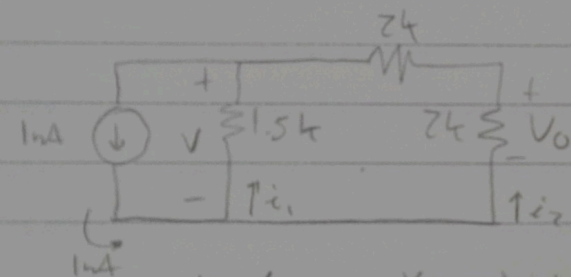


3. Primero encuentre  $V_o$ , con ese resultado encuentre todas las voltajes y corrientes del resto del circuito.



$$I = \frac{6V}{6k} = 1mA$$

$$6k // 2k = \frac{(6k)(2k)}{6k + 2k} = 1.5k$$



$$i_2 = \frac{1mA(1.5k)}{(1.5k + 2k)} = -0.27mA \quad V_o = (2k)(0.27mA) = 0.54V$$

$$i_1 = \frac{1mA(2k)}{(1.5k + 2k)} = -0.72mA$$

$$V = (-0.72mA)(1.5k) = -1.08V$$

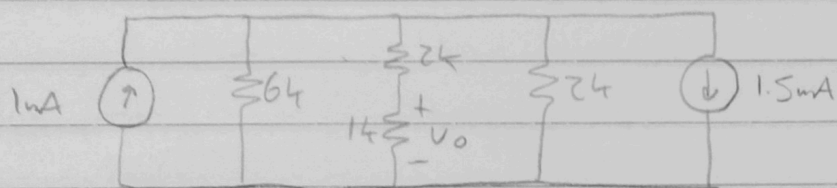
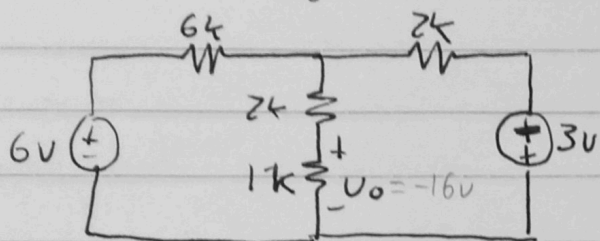
$$i_{2k} = \frac{1.08V}{2k} = -0.54mA$$

$$-6 + V_{6k} + 1.08 = 0$$

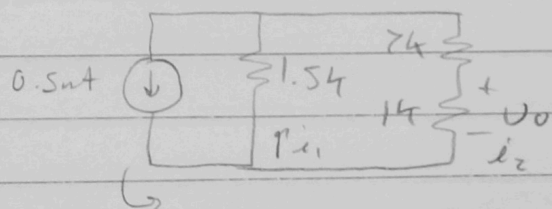
$$V_{6k} = 6 - 1.08 = 4.92$$

$$i_{6k} = \frac{4.92V}{6k} = 0.82mA$$

4. Encuentra el voltaje  $V_o$



$$6k // 2k = \frac{(6k)(2k)}{6k + 2k} = 1.5k$$

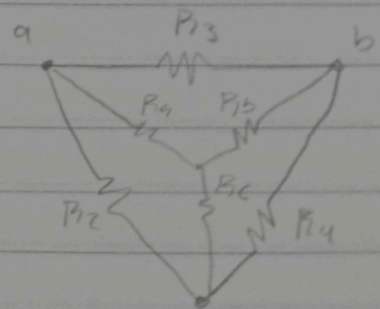
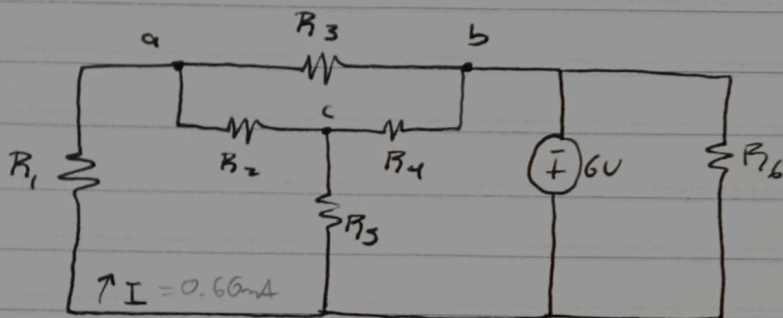


$$i_2 = \frac{(0.5mA)(1.5k)}{(1.5k + 3k)} = 0.16mA$$

$$V_o = (16mA)(1k) = -16V$$

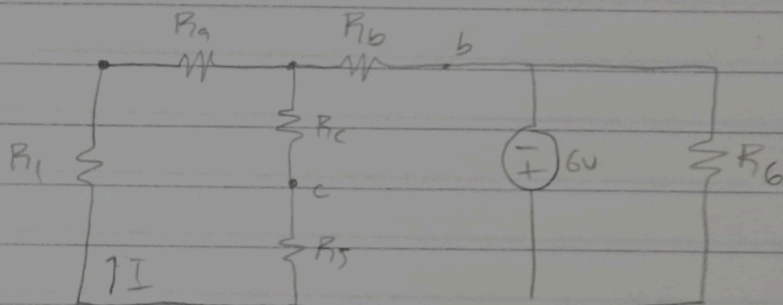


5. Encuentra  $I$  en el siguiente circuito. Todas las resistencias son de  $4.5k$

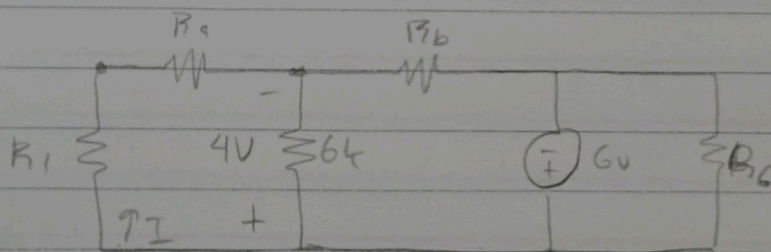


$$R_a = \frac{R_3 R_2}{R_1 + R_2 + R_3} = \frac{R^2}{3R} = \frac{R}{3}$$

$$R_a = 1.5k = R_b = R_c$$



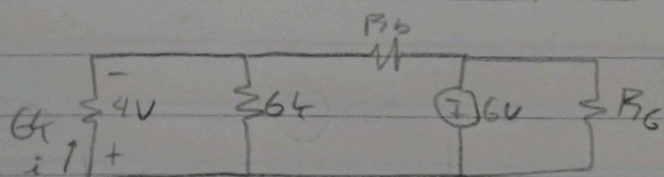
$$\text{See } R_c, R_5 = 6k$$



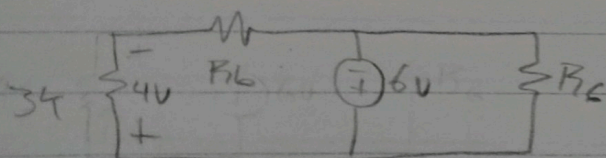
$$\text{See } R_1, R_a = 6k$$

$$4k // 6k = 3k$$

$$I = -i = 0.66mA$$



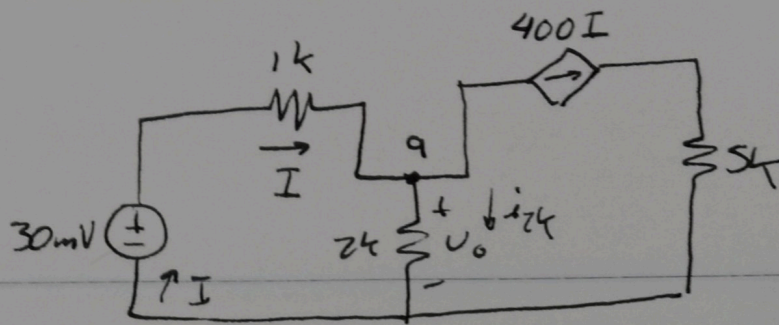
$$i = \frac{4V}{6k} = 0.66mA$$



$R_c$  divisor de voltaje

$$V_{3k} = \frac{(6V)(3k)}{(3k + 1.5k)} = 4V$$

6. Calcular  $V_o$



En el nodo a:  $-I + i_{2k} + 400I = 0$

$$i_{2k} = -399I$$

Por L4V

$$-30mV + 1kI + V_o = 0$$

$$V_o = i_{2k} 2k = -399I 2k$$

$$-30mV + 1kI - 399(2k)I = 0$$

$$I(1k + 798k) = 30mV$$

$$I(799k) = 30mV$$

$$I = \frac{30mV}{799k} = 4 \times 10^{-8} = 0.04 \times 10^{-6} A$$

$$V_o = -2k(399)(0.04 \times 10^{-6} A) = -0.031 V$$