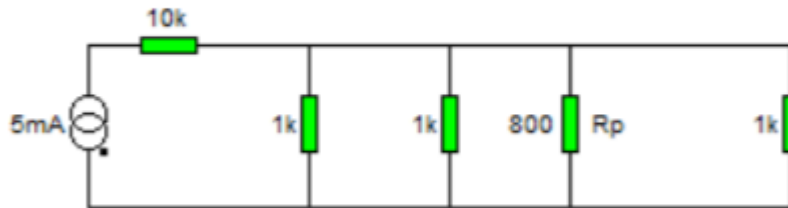


1. Calcular la corriente que circula a través de la Resistencia Rp.



$$Req1 = (1/800 + 1/1000) = 800,000/1800 = 444.4 \Omega$$

$$Req2 = (1/1000 + 1/444.4) = 444,400 / 1444.4 = 307.6 \Omega$$

$$Req3 = (1/1000 + 1/307.6) = 307,600 / 1307.6 = 235.2 \Omega$$

$$Req1 = 10,000 + 235.2 = 10,235.2 \Omega$$

$$I_n = 5 * (235.2/800) = 1.47 \text{ mA}$$

2. Calcular la potencia consumida por el LED, asumir que todas las resistencias en paralelo son de 1KΩ.



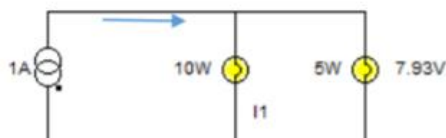
$$Req1 = (1/1000 * 8) = 1000/8 = 125 \Omega$$

$$Req2 = 125\Omega + 5000\Omega = 5125 \Omega$$

$$I_t = 50 - 2.1/5125 = 47.9/5125 = 0.00935A$$

$$P = 2.1*(0.00935) = 0.0196W$$

3. Calcular la intensidad de corriente I1, asumiendo que cada filamento tiene una potencia consumida como la que se muestra a continuación.



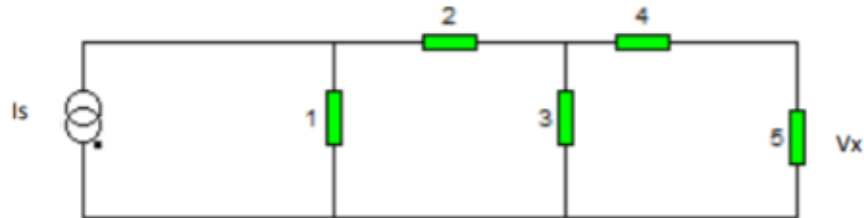
$$R_{10w} = R/I_2 = 10/1 = 10 \Omega$$

$$R_{5w} = 5/1 = 5 \Omega$$

$$I_1 = 1*10/ (10+5) = 0.666 \text{ W}$$

Dado el Siguiente Circuito:

4. Sea $V_x = 10V$, encuentre I_s .
5. Sea $I_s = 50 A$, encuentre V_x .



$$Req1 = 4 + 5 = 9 \Omega$$

$$Req2 = (1/3 + 1/9) = 27/12 = 2.25 \Omega$$

$$Req3 = 2 + 2.25 = 4.25 \Omega$$

$$Req4 = (1/1 + 1/4.25) = 4.25/5.25 = 0.81 \Omega$$

4. Sea $V_x = 10V$, encuentre I_s .

$$V_t = ((R_n / R_t) / (V_n))$$

$$V_{t1} = ((5/9)/10)) - 1 = 18V$$

$$V_4 = 18 * (4/9) = 8V \quad I_9 = 18/9 = 2A$$

$$V_t = ((2.25/4.25)/18) - 1 = 34V$$

$$I_t = 34/0.81 = 42A$$

5. Sea $I_s = 50 A$, encuentre V_x .

$$V_t = 50 * 0.81 = 40.5V$$

$$I_{4.25} = 40.5 / 4.25 = 9.53A$$

$$V_{2.25} = 9.53/2.25 = 21.44V$$

$$I_9 = 21.44/9 = 2.38A$$

$$V_5 = 2.38 * 5 = 11.9V$$