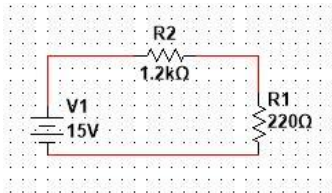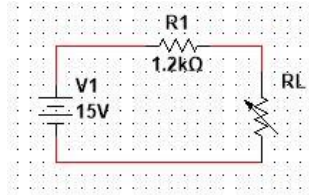Práctica del laboratorio 6

Tema: TEOREMA DE LA MÁXIMA TRANSFERENCIA DE POTENCIA.

Integrantes: Toala Yepez Anthony Tony

Sandoval Lara Rodrigo Fernando
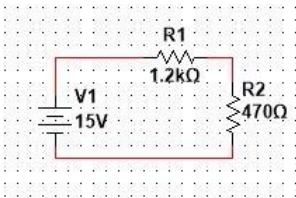
Cálculos

$R_q = 1420\Omega$

$v = 15[v]$

$I = \frac{15}{1420} = 0.0105[A]$

$v_r = 0.0105 \cdot 220\Omega$

$v_r = 2.31[v]$

$P = I \cdot v$
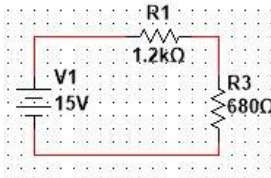
$P = 0.024[w]$

$R_q = 1670\Omega$

$v = 15[v]$

$I = \frac{15}{1670} = 8.982 \times 10^{-3}[A]$

$v_r = 8.982 \times 10^{-3} \cdot 470\Omega$

$v_r = 4.221[v]$

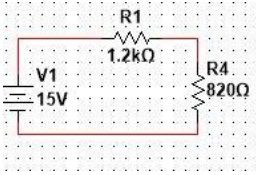$P = I \cdot v$

$P = 0.037[w]$

$R_q = 1880\Omega$

$v = 15[v]$

$I = \frac{15}{1880} = 7.978 \times 10^{-3}[A]$

$v_r = 7.978 \times 10^{-3} \cdot 680\Omega$

$v_r = 5.425[v]$

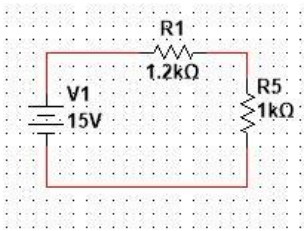$P = I \cdot v$

$P = 0.043[w]$

$R_q = 2020\Omega$

$v = 15[v]$

$I = \frac{15}{2020} = 7.425 \times 10^{-3}[A]$

$v_r = 7.425 \times 10^{-3} \cdot 820\Omega$

$v_r = 6.084[v]$

$P = I \cdot v$
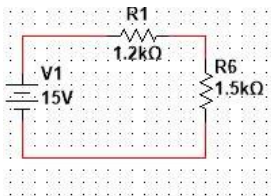
$P = 0.045[w]$

$R_q = 2200\Omega$

$v = 15[v]$

$I = \frac{15}{2200} = 6.818 \times 10^{-3}[A]$

$v_r = 6.818 \times 10^{-3} \cdot 1000\Omega$

$v_r = 6.81[v]$

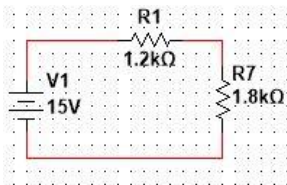$P = I \cdot v$

$P = 0.046[w]$

$R_q = 2700\Omega$

$v = 15[v]$

$I = \frac{15}{2700} = 5.555 \times 10^{-3}[A]$

$v_r = 5.555 \times 10^{-3} \cdot 1500\Omega$

$v_r = 8.333[v]$

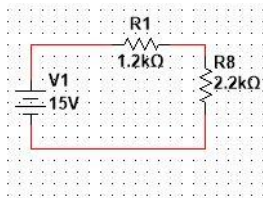$P = I \cdot v$

$P = 0.046[w]$

$R_q = 3000\Omega$

$v = 15[v]$

$I = \frac{15}{3000} = 5 \times 10^{-3}[A]$

$v_r = 5 \times 10^{-3} \cdot 1800\Omega$

$v_r = 8.333[v]$

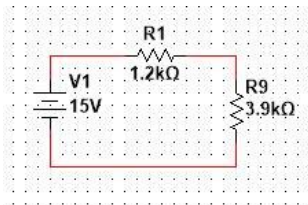$P = I \cdot v$

$P = 0.045[w]$

$R_q = 3400\Omega$

$v = 15[v]$

$I = \frac{15}{3400} = 4.411 \times 10^{-3}[A]$

$v_r = 4.411 \times 10^{-3} \cdot 2200\Omega$

$v_r = 9.705[v]$

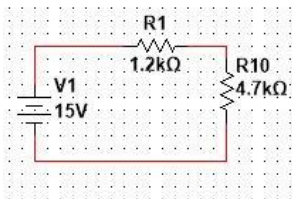$P = I \cdot v$

$P = 0.042[w]$

$R_q = 5100\Omega$

$v = 15[v]$

$I = \frac{15}{5100} = 2.941 \times 10^{-3}[A]$

$v_r = 2.941 \times 10^{-3} \cdot 3900\Omega$

$v_r = 11.470[v]$

$P = I \cdot v$

$P = 0.033[w]$

$R_q = 5900\Omega$

$v = 15[v]$

$I = \frac{15}{5900} = 2.542 \times 10^{-3}[A]$

$v_r = 2.542 \times 10^{-3} \cdot 4700\Omega$

$v_r = 11.949[v]$

$P = I \cdot v$

$P = 0.030[w]$

Cálculo del error

220 Ω

$$error = \frac{0.025 - 0.024}{0.025} \cdot 100 = 0{,}1\%$$

470 Ω

$$error = \frac{0.037 - 0.037}{0.037} \cdot 100 = 0\%$$

680 Ω

$$error = \frac{0.043 - 0.043}{0.043} \cdot 100 = 0\%$$

820 Ω

$$error = \frac{0.045 - 0.045}{0.045} \cdot 100 = 0\%$$

1000 Ω

$$error = \frac{0.046 - 0.046}{0.046} \cdot 100 = 0\%$$

1500 Ω

$$error = \frac{0.046 - 0.046}{0.046} \cdot 100 = 0\%$$

1800 Ω

$$error = \frac{0.045 - 0.045}{0.045} \cdot 100 = 0\%$$

2200 Ω

$$error = \frac{0.042 - 0.042}{0.042} \cdot 100 = 0\%$$

3900 Ω

$$error = \frac{0.033 - 0.033}{0.033} \cdot 100 = 0\%$$

4700 Ω

$$error = \frac{0.030 - 0.030}{0.030} \cdot 100 = 0\%$$