

Ejercicio 1

Resistencia R12//R13

1 $R_{12//R13} = \frac{220\Omega \times 220\Omega}{220\Omega + 220\Omega} = 110\Omega$

Resistencia Total

2 $R_T = R_{11} + R_{12//R13} + R_{13} = 540\Omega$

Corriente Total

3 $I_T = \frac{5V}{540\Omega} = \frac{1}{108}A \approx 0.009A$

Valores R11

4 $V_{R11} = 110\Omega \times \frac{1}{108}A = \frac{55}{54}V \approx 1V$

$I_{R11} \approx 0.009A$

Valores R14

4 $V_{R11} = 330\Omega \times \frac{1}{108}A = \frac{55}{18}V \approx 3V$

$I_{R11} \approx 0.009A$

Valores R12

4 $V_{R14} = 220\Omega \times \left(\frac{1}{180}A \div 2 \right) = \frac{55}{54}V \approx 1V$

$I_{R14} = \frac{1V}{220\Omega} \approx 0.0045A$

Valores R12

4 $V_{R13} = V_{R12}$

$I_{R13} = I_{R14}$

Ejercicio 2

Valores R21//R22

$$\textcircled{1} \quad R_{21//R22} = \frac{220\Omega \times 100\Omega}{220\Omega + 100\Omega} = \frac{275}{4}\Omega = 68.75\Omega$$

Valores R23//R24

$$\textcircled{2} \quad R_{21//R22} = \frac{330\Omega \times 150\Omega}{330\Omega + 150\Omega} = \frac{825}{8}\Omega = 103.125\Omega$$

Resistencia total

$$\textcircled{3} \quad R_T = 68.75\Omega + 103.125\Omega = 171.875\Omega$$

Corriente total

$$\textcircled{4} \quad I_T = \frac{5V}{171.875\Omega} \approx 0.03A$$

Corriente R21//R22

$$\textcircled{5} \quad I_{R21//R22} = 0.03A$$

Voltaje R21//R22

$$\textcircled{6} \quad V_{R21//R22} = 0.03A \times 68.75\Omega = 2.06V$$

Voltaje R21 y R22

$$\textcircled{7} \quad V_{R21} = V_{R22} = 2.06V$$

Corriente R23//R24

$$\textcircled{8} \quad I_{R23//R24} = 0.03A$$

Voltaje R23//R24

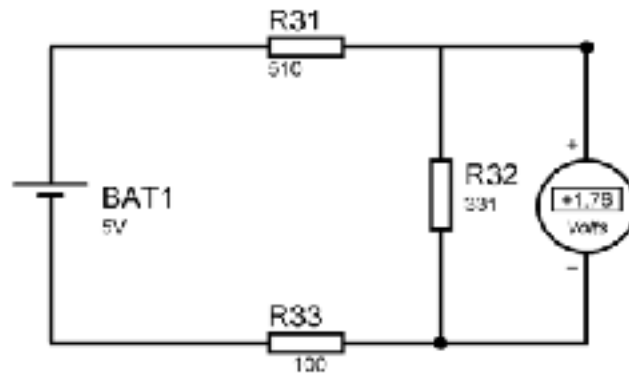
$$\textcircled{9} \quad V_{R23//R24} = 0.03A \times 103.125\Omega = 3.09V$$

Voltaje R23//R24

$$\textcircled{10} \quad V_{R23} = 3.09V$$

Ejercicio 3

ELEMENTO	VOLTAJE	RESISTENCIA	CORRIENTE
R31	0.5V	510 Ω	0.0053 A
R32	1.76 V	331 Ω	0.0053 A
R33	2.2V	100 Ω	0.0053 A



$$I_{R32} = \frac{1.76}{R32}$$

$$I\tau = \frac{5V}{100 + 510 + R32}$$

$$\frac{1.76}{R32} = \frac{5V}{610 + R32}$$

$$1.76(610 + R32) = 5(R32)$$

$$1074 + 1.76(R32) = 5(R32)$$

$$1074 = 5(R32) - 1.76(R32)$$

$$1074 = 3.24(R32)$$

$$\frac{1074}{3.24} = R32$$

$$331 = R32$$

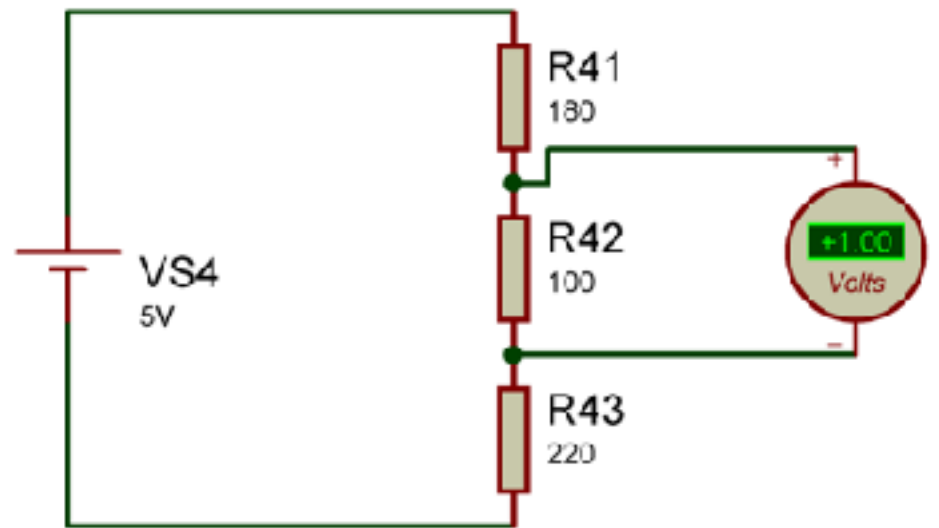
Ejercicio 4

1

Corriente total

$$I_T = \frac{1V}{100\Omega}$$

$$I_T = 0.01A$$



2

Voltaje Resistencia R43

$$I_{R43} = 220\Omega \times 0.01A$$

$$I_{R43} = 2.2V$$

3

Voltaje Resistencia R41

$$-5V + V_{R41} + 1V + 2.2V = 0$$

$$V_{R41} = 5V - 1V + 2.2V$$

$$V_{R41} = 1.8V$$

4

Resistencia R41

$$R_{R41} = \frac{1.8V}{0.01A}$$

$$R_{R41} = 180\Omega$$

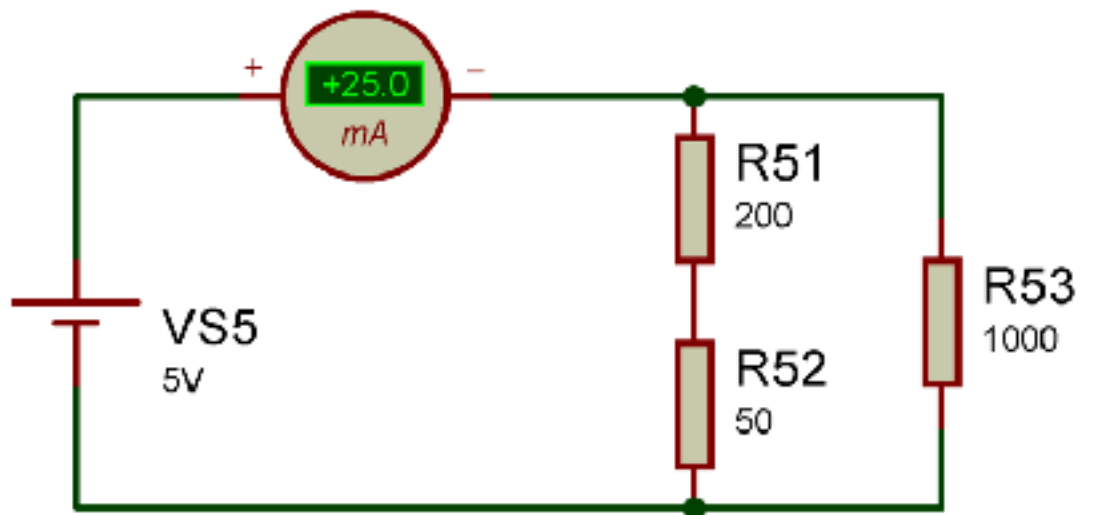
Ejercicio 5

1

Corriente R53

$$I_{R53} = \frac{5V}{1000\Omega}$$

$$I_{R53} = 0.005A$$



2

Voltaje R51

$$V_{R51} = 1000\Omega \times 0.02A$$

$$V_{R51} = 4V$$

3

Voltaje R52

$$-5V + 4V + V_{R52} = 0$$

$$V_{R52} = 1V$$

4

Resistencia R52

$$R_{R52} = \frac{1V}{0.02A}$$

$$R_{R52} = 50\Omega$$

Ejercicio 6

Resistencia R52

1

$$R_{R52} = \frac{1V}{0.02A}$$

$R_{R52} = 50\Omega$

