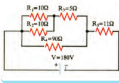


26. Στο παρακάτω κύκλωμα, να βρείτε σε J τη θερμότητα που εκλύεται σε κάθε αντίσταση σε χρόνο $t = 1 \text{ min}$.



$$26. R_{12} = \frac{R_1 \cdot R_2}{R_1 + R_2} = 5\Omega$$

$$R_{123} = R_{12} + R_3 = 10\Omega$$

$$R_{1234} = \frac{R_{123} \cdot R_4}{R_{123} + R_4} = 9\Omega$$

$$R_{\text{ολ}} = R_{1234} + R_5 = 20\Omega$$

$$I = \frac{V}{R_{\text{ολ}}} = 9A$$

$$V_5 = I \cdot R_5 = 99V$$

$$V_{1234} = I \cdot R_{1234} = 81V$$

$$I_4 = \frac{V_{1234}}{R_4} = 0,9A$$

$$I_3 = \frac{V_{1234}}{R_{123}} = 8,1A$$

$$V_3 = I_3 \cdot R_3 = 40,5V$$

$$V_{12} = I_3 \cdot R_{12} = 40,5V$$

$$I_1 = \frac{V_{12}}{R_1} = 4,05A$$

$$I_2 = \frac{V_{12}}{R_2} = 4,05A$$

$$Q_1 = I_1^2 \cdot R_1 \cdot t = 9.841,5J$$

$$Q_2 = I_2^2 \cdot R_2 \cdot t = 9.841,5J$$

$$Q_3 = I_3^2 \cdot R_3 \cdot t = 19.683J$$

$$Q_4 = I_4^2 \cdot R_4 \cdot t = 4.374J$$

$$Q_5 = I^2 \cdot R_5 \cdot t = 5.346J.$$