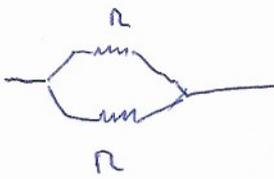


CONEXÃO EXERCÍCIOS

9



paralelo

$$R_p = \frac{1}{\frac{1}{R} + \frac{1}{R}} = \frac{1}{\frac{2}{R}} = \frac{R}{2}$$



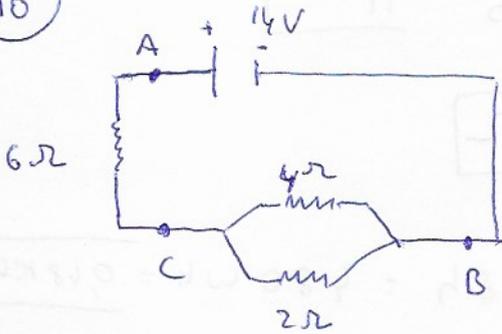
série

$$R_s = R + R = 2R$$

$$\frac{R_p}{R_s} = \frac{\frac{R}{2}}{2R} = \frac{R}{4R} = \frac{1}{4}$$

$$R_p = \frac{1}{4} \cdot R_s$$

10



$$b) R_{eqp} = \frac{1}{\frac{1}{4} + \frac{1}{2}} = \frac{1}{\frac{1}{4} + \frac{2}{4}} = \frac{1}{\frac{3}{4}} = \frac{4}{3} \Omega$$

$$R_{eqtotal} = 6 + \frac{4}{3} = \frac{22}{3} \Omega = 7,3 \Omega$$

$$c) I = \frac{V}{R_{eqT}} = \frac{14}{7,3} = 1,9 A$$

$$d) V_{ac} = I \cdot R = 1,9 \cdot 6 = 11,4 V$$

$$e) V_{cd} = V - V_{ac} = 14 - 11,4 = 2,6 V$$

11

Circuit (a)

$$R_{eqT} = 2 + \frac{1}{\frac{1}{6} + \frac{1}{4}} = 2 + \frac{1}{\frac{5}{12}} = 2 + \frac{12}{5} = \frac{22}{5} = 4,4 \Omega$$

$$a) I = \frac{V}{R} = \frac{72}{4,4} = 16,36 A$$

$$b) R_{eqp} = \frac{12}{5} = 2,4 \Omega$$

$$V = I \cdot R_{eqp} = 16,36 \cdot 2,4 = 39,26 V$$

Circuit (b)

$$R_{eqp} = \frac{1}{\frac{1}{2} + \frac{1}{4} + \frac{1}{6}} = \frac{1}{\frac{6}{12} + \frac{3}{12} + \frac{2}{12}} = \frac{1}{\frac{11}{12}} = \frac{12}{11} = 1,09 \Omega$$

$$R_{eqT} = 3 + 1,09 = 4,09 \Omega$$

$$a) I_T = \frac{V_T}{R_{eqT}} = \frac{24}{4,09} = 5,87 A$$

$$V = I \cdot R = 5,87 \cdot 3 = 17,6 V$$

$$b) V = 24 - 17,6 = 6,4 \text{ V}$$

$$I = \frac{V}{R}$$

$$I = \frac{6,4}{2} = 3,2 \text{ A}$$

$$I = \frac{6,4}{4} = 1,6 \text{ A}$$

$$I = \frac{6,4}{6} = 1,07 \text{ A}$$

12

$$P = 60 \text{ W}$$

$$V = 220 \text{ V}$$

$$a) P = I \cdot V$$

$$I = \frac{P}{V} = \frac{60}{220} = \frac{3}{11} \text{ A}$$

$$b) R = \frac{V}{I} = \frac{V}{\frac{P}{V}} = \frac{V^2}{P} = \frac{220^2}{60} = 806,7 \Omega$$

$$c) E = R \cdot I^2 \cdot \Delta t = P \cdot \Delta t = 60 \text{ W} \cdot 8 \text{ h} = 480 \text{ Wh} = 0,48 \text{ kWh}$$

$$d) V = 125 \text{ V}$$

$$R = 806,7 \Omega$$

$$I = \frac{V}{R} = \frac{125}{806,7} = 0,15 \text{ A}$$

$$P = I \cdot V = 0,15 \cdot 125 = 18,8 \text{ W}$$