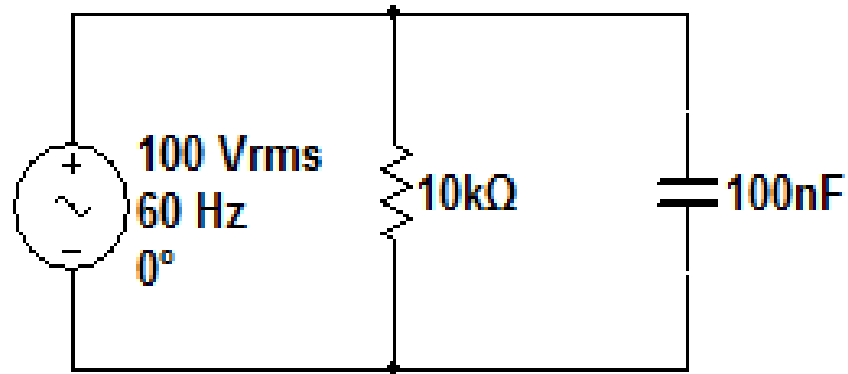


Exercícios RLC Paralelo

1. Calcular a corrente do circuito RC paralelo abaixo, calculando as divisões das correntes nos componentes e os ângulos de defasagem:



$$X_C = -j26,53k\Omega$$

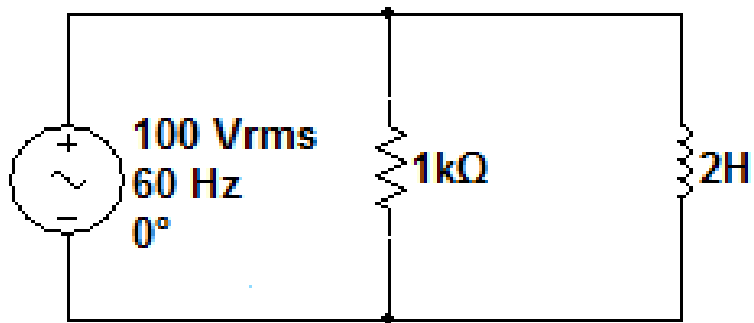
$$Z = \frac{10k\angle 0^\circ \cdot 26,53k\angle -90^\circ}{10k - j26,53k} = \frac{10k\angle 0^\circ \cdot 26,53k\angle -90^\circ}{28,35k\angle -69,35^\circ} = 9,36k\angle -20,65^\circ \Omega$$

$$I_{ef} = \frac{100\angle 0^\circ}{9,36k\angle -20,65^\circ} = 10,68m\angle 20,65^\circ A$$

$$I_{cef} = \frac{100\angle 0^\circ}{26,53k\angle -90^\circ} = 3,77m\angle 90^\circ A$$

$$I_{Ref} = \frac{100\angle 0^\circ}{10k\angle 0^\circ} = 10m\angle 0^\circ A$$

2. Calcular a corrente do circuito RL paralelo abaixo, calculando as divisões das correntes nos componentes e os ângulos de defasagem:



$$X_L = j754\Omega$$

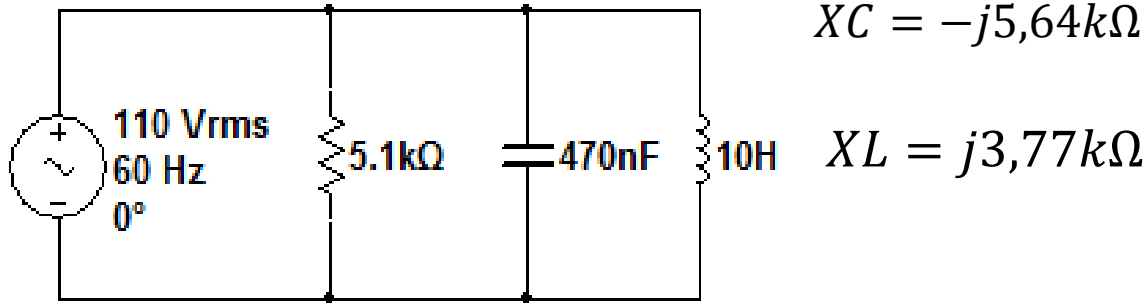
$$Z = \frac{1k\angle 0^\circ \cdot 754\angle 90^\circ}{1,25k\angle 37,02^\circ} = 603,2\angle 52,98^\circ\Omega$$

$$I_{ef} = \frac{100\angle 0^\circ}{603,2\angle 52,98^\circ} = 165,78m\angle -52,98^\circ A$$

$$I_{Ref} = \frac{100\angle 0^\circ}{1k\angle 0^\circ} = 100m\angle 0^\circ A$$

$$I_{Lef} = \frac{100\angle 0^\circ}{754\angle 90^\circ} = 132,63m\angle -90^\circ A$$

3. Calcular a corrente do circuito RLC paralelo abaixo, calculando as divisões das correntes nos componentes e os ângulos de defasagem:



$$I_{Ref} = \frac{110\angle 0^\circ}{5,1k\angle 0^\circ} = 21,57m\angle 0^\circ A$$

$$I_{cef} = \frac{110\angle 0^\circ}{5,64k\angle -90^\circ} = 19,5m\angle 90^\circ A$$

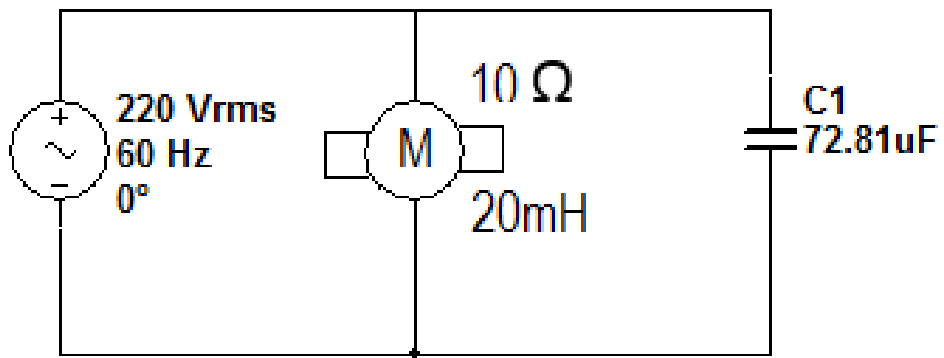
$$I_{Lef} = \frac{110\angle 0^\circ}{3,77k\angle 90^\circ} = 29,18m\angle -90^\circ A$$

$$Z_{Parcial} = \frac{5,1k\angle 0^\circ \cdot 5,64k\angle -90^\circ}{7,60k\angle -47,88^\circ} = 3,78k\angle -42,12^\circ \Omega$$

$$Z = \frac{3,78k\angle -42,12^\circ \cdot 3,77k\angle 90^\circ}{2,80k - j2,53k + j3,77k} = \frac{3,78k\angle -42,12^\circ \cdot 3,77k\angle 90^\circ}{3,06k\angle 23,88^\circ} = 4,66k\angle 24^\circ \Omega$$

$$I_{ef} = \frac{110\angle 0^\circ}{4,66k\angle 24^\circ} = 23,61m\angle -24^\circ A$$

4. Calcular a corrente do circuito paralelo abaixo, calculando as divisões das correntes nos componentes e os ângulos de defasagem:



$$X_L = j7,54\Omega$$

$$X_C = -j36,42\Omega$$

$$Z = \frac{12,52\angle 37,01^\circ \cdot 36,42\angle -90^\circ}{10 + j7,54 - j36,42} =$$

$$Z = \frac{12,52\angle 37,01^\circ \cdot 36,42\angle -90^\circ}{30,56\angle -70,9^\circ} =$$

$$Z = 14,92\Omega\angle 17,91^\circ$$

$$I_{ef} = \frac{220\angle 0^\circ}{14,92\angle 17,91^\circ} = 14,74\angle -17,91^\circ A$$

$$I_{Cef} = \frac{220\angle 0^\circ}{36,42\angle -90^\circ} = 6,04\angle 90^\circ A$$

$$I_{Mef} = \frac{220\angle 0^\circ}{12,52\angle 37,01^\circ} = 17,57\angle -37,01^\circ A$$