

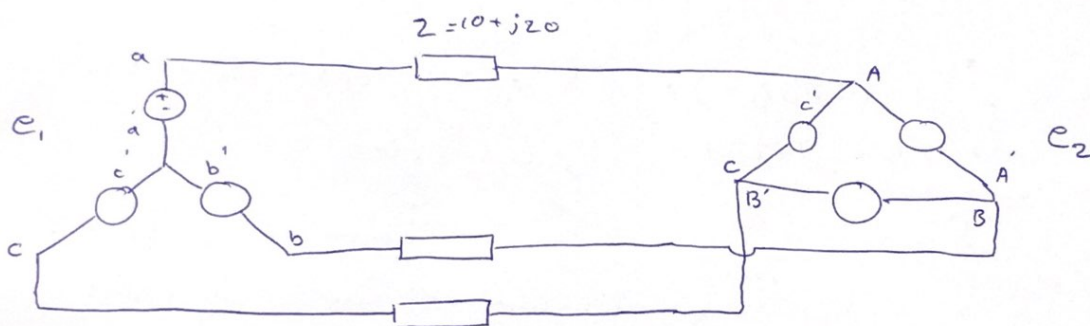


بارش

رضا ادینه پور

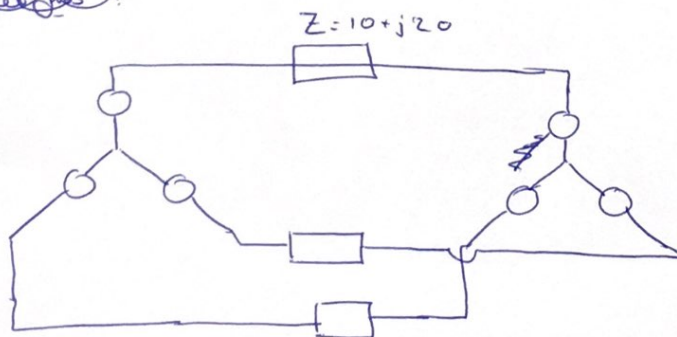
۹۸۱۴۳۰۳

کدین اول فصل سیم



$$E_1: \begin{cases} e_1 = 400 \cos(\omega_s t) \text{ V} \rightarrow E_{rms} = \frac{400}{\sqrt{2}} = 283 \text{ V} \\ I = 5 \sin(\omega_s t) = 5 \cos(\omega_s t - 90^\circ) \text{ A} \rightarrow I_{rms} = \frac{5}{\sqrt{2}} = 3.5 \text{ A} \end{cases}$$

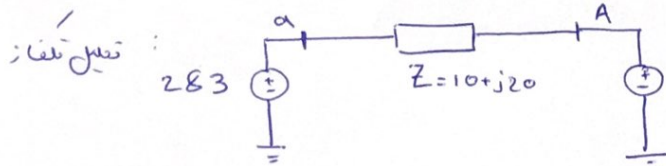
تغییرات:



اتصال مثبت به ستاره تبدیل می شود

$$\begin{cases} V_{aa'} = 283 \angle 0^\circ \\ V_{bb'} = 283 \angle -120^\circ \\ V_{cc'} = 283 \angle +120^\circ \end{cases}$$

$$\begin{cases} I_a = 3.5 \angle 120^\circ = I_A \\ I_b = 3.5 \angle -120^\circ = I_B \\ I_c = 3.5 \angle 240^\circ = I_C \end{cases}$$



$$KVL: -283 + ZI + V_{AA'} = 0 \Rightarrow V_{AA'} = 283 - (10 + j20)(-1.75 + j2.8)$$

$$\Rightarrow V_{AA'} = 356.5 + j7 \Rightarrow \begin{cases} V_{AA'} = 356 \angle 1.12^\circ \\ V_{BB'} = 356 \angle -118.88^\circ \\ V_{CC'} = 356 \angle 121.12^\circ \end{cases}$$



$$\therefore PF = \cos\left(\tan^{-1}\left(\frac{X}{R}\right)\right) = \cos\left(\tan^{-1}\left(\frac{20}{10}\right)\right) = 0.44$$

$$c) S = ? \Rightarrow S = P + jQ$$

$$S = V_a I_a^* = (283 \angle 0^\circ) \times (3.5 \angle +120^\circ) = 283(-1.75 - j2.8) =$$

$$= \underbrace{-495.25}_P - j \underbrace{792.4}_Q$$

یا فرض
است



الآن معنی شده است - ما کس، مولد است .