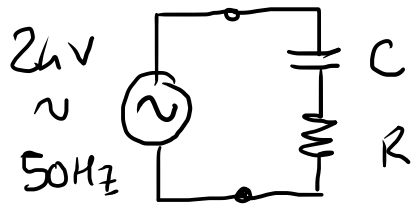
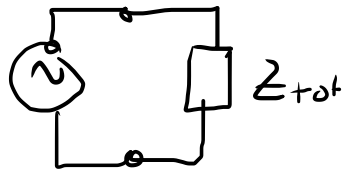


$$Z_R = 100\,k\Omega + j\,0 = 100\,k\Omega$$

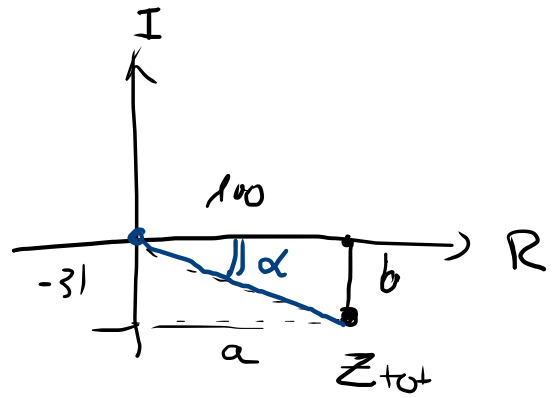
$$Z_C = -j\frac{1}{\omega C} = -j\frac{1}{2\pi \cdot 50 \cdot 100 \cdot 10^{-9}} = -j\frac{10^9}{\pi \cdot 10^4} =$$

$\frac{1}{2\pi f}$; $2\pi \cdot 50 \cdot 100$; $100 = 10^2$

$$= -j\frac{10^5}{\pi} = -j\,31{,}8\,k\Omega$$



$$Z_{tot} = Z_R + Z_C = 100k - j\,31{,}8k$$



$$|z| = \sqrt{100^2_k + 31{,}8^2_k} = 104{,}948\,k \cong 105\,k$$

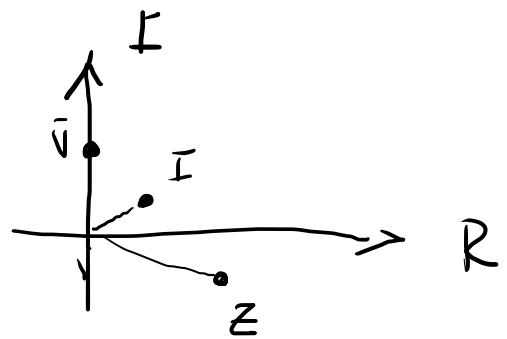
$$tg\,\alpha = -\frac{b}{a} = -0{,}31947$$

$$\alpha = arctg\,(-0{,}3\ldots) = -17{,}67^\circ$$

$$\vec{V} = 24V \angle\, 0^\circ \qquad Z_{tot} = 105k \angle\, (-17^\circ\ldots)$$

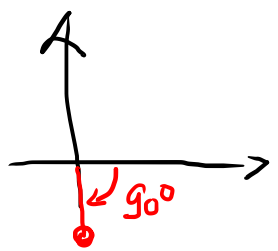
$$\vec{I} = \frac{\vec{V}}{Z} = \frac{24V \angle 0^\circ}{105k \angle (-17^\circ)} = \left(\frac{24V}{105k\Omega}\right) \angle \left(0^\circ - (-17^\circ)\right) =$$

$$= 0{,}23\,mA \angle 17^\circ$$



$\vec{V_C} = \vec{I} \cdot Z_C \rightsquigarrow a + jb \ldots \quad 0 - j\,31{,}8k$

$\vec{V_R} = \vec{I} \cdot Z_R$



$$\vec{V_C} = \left[0{,}23mA \angle 17^\circ\right] \cdot \left[31{,}8k\Omega \angle -90^\circ\right] = \left(0{,}23 \cdot 31{,}8k\right) \angle \left(17^\circ - 90^\circ\right) =$$

$$= 7{,}31\,V \angle -73^\circ$$