① $u(t=0) = \sqrt{2}\sqrt{\left(\frac{1}{3}\right)^2+\left(\frac{1}{2}\right)^2}\cdot \sin\left(\omega\cdot 0 + \operatorname{atan}\left(\frac{\frac{1}{2}}{\frac{1}{3}}\right)\right) = 0{,}707\,V$

②

$I_C = 2\,A$

$X_C = 5\,\Omega$

$X_L = 5\,\Omega$

$R = 5\,\Omega$

$\dot{I}_C = 2\angle 0^\circ\ A$

$\dot{U}_C = \dot{I}_C(-jX_C) = 2\angle 0^\circ \cdot 5\angle -90^\circ = 10\angle -90^\circ\ V$

$\dot{U}_C = \dot{U}_{RL}$

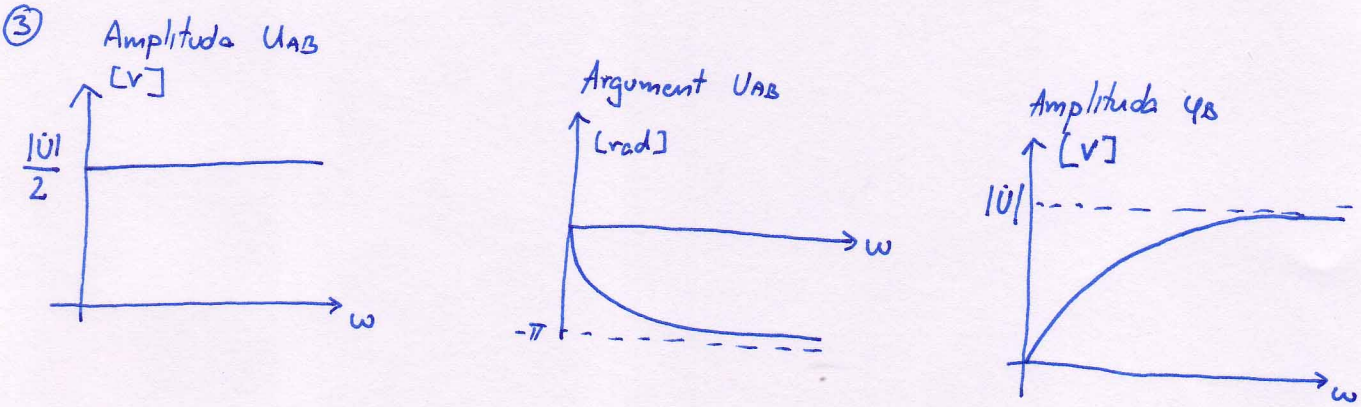
$Z_{RL} = R + jX_L = 5 + j5 = 5\sqrt{2}\angle 45^\circ\ \Omega$

$\dot{I}_{RL} = \frac{\dot{U}_{RL}}{Z_{RL}} = \frac{-j10}{5+j5} = \frac{10\angle -90^\circ}{5\sqrt{2}\angle 45^\circ} = \sqrt{2}\angle -135^\circ$

$= -1-j\ A$

$\dot{I}_{12V} = \dot{I}_C + \dot{I}_{RL} = 2-1-j = 1-j\,[A] = \sqrt{2}\angle -45^\circ\ [A]$

③



④