

$$C-) \quad x(t) = A e^{-\gamma t} \sin(\omega_0 t + \Theta_0)$$

$$x(0) = A \sin(\Theta_0)$$

$$0,05 = A \sin(\Theta_0)$$

$$A = \frac{0,05}{\sin \Theta_0} = \frac{0,05}{\sin(1,52)} = 5,01 \cdot 10^{-2} \text{ m}$$

$$V(t) = A e^{-\gamma t} [-\gamma \sin(\Theta_0) + \omega \cos(\Theta_0)]$$

$$V(0) = A [-\gamma \sin(\Theta_0) + \omega \cos(\Theta_0)]$$

$$0 = A [-\gamma \sin(\Theta_0) + \omega \cos(\Theta_0)]$$

$$\xrightarrow{\Delta} A \neq 0$$

$$-\gamma \sin(\Theta_0) = \omega \cos(\Theta_0)$$

$$\frac{\sin(\Theta_0)}{\cos(\Theta_0)} = \frac{\omega}{\gamma} \quad \Rightarrow \quad \Theta = 1,52 \text{ rad}$$

$$\tan \Theta_0 = \frac{\omega}{\gamma}$$

$$\arctan \Theta = \frac{6,99}{0,358}$$

$$\arctan \Theta = 19,52$$

$$x(t) = 5,01 \cdot 10^{-2} e^{-0,358t} \sin(6,99t + 1,52)$$