

rechnung_umkehrintegrator

Student Group

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$U_A = f(U_E)$	mit III.	
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_E dt$		$U_D = \frac{1}{A_D} \int U_A dt \rightarrow \infty \rightarrow 0$
$U_A = \frac{1}{C} \int U_D dt$	mit II. und I.	
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_D dt$		
$U_A = 0 \quad U_C = \frac{1}{C} \int U_D dt + Q_0(t_0)$	mit V.	
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_D dt$		
$U_A = -\frac{1}{C} \int U_C dt + Q_0(t_0)$	mit IV.	$U_C = I_R$
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_C dt$		
$U_A = \frac{1}{C} \int U_C dt + Q_0(t_0)$	Ausklammern	
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_C dt$		
$U_A = -\frac{1}{C} \int U_C dt + Q_0(t_0)$	Integrationskonstante betrachten	$Q_0(t_0) = U_C(t_0) = -U_{A0}$
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_C dt$		
$U_A = -\frac{1}{C} \int U_C dt + U_{A0}$	mit VI. und II.	$U_R = \frac{U_E}{R} = \frac{U_C}{R}$
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_C dt$		
$U_A = -\frac{1}{C} \int U_C dt + U_{A0}$	Konstante vorziehen	
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_C dt$		
$U_A = -\frac{1}{R} \int U_C dt + U_{A0}$	Zeitkonstante $\tau = R \cdot C$ einfügen	
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_C dt$		
$U_A = -\frac{1}{\tau} \int U_C dt + U_{A0}$		
$\frac{1}{C} \int U_A dt = \frac{1}{C} \int U_C dt$		

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