

# rechnung\_umkehrintegrator

## Student Group

First Name	Surname	Matrikel Nr.

## Table of Contents

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

From: <https://mexle.te.hs-heilbronn.de/> - MEXLE Wiki

Permanent link: [https://mexle.te.hs-heilbronn.de/circuit\\_design/rechnung\\_umkehrintegrator?rev=1641767933](https://mexle.te.hs-heilbronn.de/circuit_design/rechnung_umkehrintegrator?rev=1641767933)

Last update: 2022/01/09 23:38

