

rechnung_signalzeitverlauf_umkehrintegrator

Student Group

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\$I.\quad\$ Am Punkt \$t_1\$

$U_A(t_1) = -\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	
$\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	$\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$
$U_A(t_1) = -\frac{1}{5 \text{ k}\Omega \cdot 1 \text{ }\mu\text{F}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt + 0 \text{ V}$	
$\frac{1}{5 \text{ k}\Omega \cdot 1 \text{ }\mu\text{F}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt + 0 \text{ V}$	$\frac{1}{5 \text{ k}\Omega \cdot 1 \text{ }\mu\text{F}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt + 0 \text{ V}$
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt$	
$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt$	$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt$
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt = -2 \text{ V}$	
$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt = -2 \text{ V}$	$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} 1 \text{ V} \, dt = -2 \text{ V}$

\$I.\quad\$ Am Punkt \$t_2\$

$U_A(t_1) = -\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	
$\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	$\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} (-1 \text{ V}) \, dt + 2 \text{ V} = 0 \text{ V}$	
$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} (-1 \text{ V}) \, dt + 2 \text{ V} = 0 \text{ V}$	$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} (-1 \text{ V}) \, dt + 2 \text{ V} = 0 \text{ V}$

\$I.\quad\$ Am Punkt \$t_3\$

$U_A(t_1) = -\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	
$\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	$\frac{1}{\tau} \cdot \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} (-2 \text{ V}) \, dt + 0 \text{ V} = -2 \text{ V}$	
$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} (-2 \text{ V}) \, dt + 0 \text{ V} = -2 \text{ V}$	$\frac{1}{5 \text{ ms}} \cdot \int_{t_0}^{t_1} (-2 \text{ V}) \, dt + 0 \text{ V} = -2 \text{ V}$

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Last update: 2021/05/09 09:53

