

rechnung_signalzeitverlauf_umkehrintegrator

Student Group

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At the point t_1

$U_A(t_1) = -\frac{1}{\tau} \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \int_{0}^{10 \text{ ms}} 1 \text{ V} \, dt + 0 \text{ V}$	
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \int_{0}^{10 \text{ ms}} 1 \text{ V} \, dt + 0 \text{ V} = -2 \text{ V}$	

At the point t_2

$U_A(t_1) = -\frac{1}{\tau} \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \int_{0}^{20 \text{ ms}} (-1 \text{ V}) \, dt + 2 \text{ V} = 0 \text{ V}$	

At the point t_3

$U_A(t_1) = -\frac{1}{\tau} \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$	
$U_A(t_1) = -\frac{1}{5 \text{ ms}} \int_{0}^{20 \text{ ms}} (-2 \text{ V}) \, dt + 0 \text{ V} = -2 \text{ V}$	

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