

rechnung_signalzeitverlauf_umkehrintegrator

Student Group

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At the point t_1

$U_{\text{O}}(t_1) = \frac{1}{\tau} \int_{t_0}^{t_1} U_{\text{I}}(t) dt + U_{\text{O}}(t_0)$	
$U_{\text{O}}(t_1) = -\frac{1}{5 \text{ ms}} \int_0^{10 \text{ ms}} 1 \text{ V} dt + 0 \text{ V}$	
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At the point t_2

$U_{\text{O}}(t_1) = \frac{1}{\tau} \int_{t_0}^{t_1} U_{\text{I}}(t) dt + U_{\text{O}}(t_0)$	
$U_{\text{O}}(t_1) = -\frac{1}{5 \text{ ms}} \int_0^{10 \text{ ms}} (-1 \text{ V}) dt + 0 \text{ V} = 0 \text{ V}$	

At the point t_3

$U_{\text{O}}(t_1) = \frac{1}{\tau} \int_{t_0}^{t_1} U_{\text{I}}(t) dt + U_{\text{O}}(t_0)$	
$U_{\text{O}}(t_1) = -\frac{1}{5 \text{ ms}} \int_0^{10 \text{ ms}} (-2 \text{ V}) dt + 0 \text{ V} = -2 \text{ V}$	

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