

rechnung_signalzeitverlauf_umkehrintegrator

Student Group

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Am Punkt t_1

$$U_A(t_1) = -\frac{1}{\tau} \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$$

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

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

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

Am Punkt t_2

$$U_A(t_1) = -\frac{1}{\tau} \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$$

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

Am Punkt t_3

$$U_A(t_1) = -\frac{1}{\tau} \int_{t_0}^{t_1} U_E \, dt + U_A(t_0)$$

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

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