rechnung_signalzeitverlauf_umkehrintegrator

Student Group

First Name	Surname	Matrikel Nr.

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$I.\quad$ Am Punkt t_1

$$U_{A}(t_1) \ = -\quad { 1 \over {\tau} } \quad \ \cdot \int_{t_0}^{t_1} U_E \ dt \ + \ U_{A}(t_0)$$
$$\qquad\qquad\qquad\qquad\qquad\quad$$
$$U_{A}(t_1) \ = -{ 1 \over {5 k\Omega \cdot 1 \mu F} }\cdot\int_{0}^{10ms} 1V \ dt + 0V$$
$$\qquad\qquad\qquad\qquad\qquad\quad$$
$$U_{A}(t_1) \ = -{ 1 \over {5 ms} } \quad \cdot 1V \ \cdot \int_{0}^{10ms} \ dt$$
$$\qquad\qquad\qquad\qquad\qquad\quad$$
$$U_{A}(t_1) \ = -{ 1 \over {5 ms} } \quad \cdot 1V \ \cdot [t]_{0}^{10ms} = -2V$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\quad$$

$I.\quad$ Am Punkt t_2

$$U_{A}(t_1) \ = -\quad { 1 \over {\tau} } \quad \ \cdot \int_{t_0}^{t_1} U_E \ dt \ + \ U_{A}(t_0)$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\quad$$
$$U_{A}(t_1) \ = -{ 1 \over {5 ms} } \quad \cdot (-1V) \ \cdot [t]_{10ms}^{20ms} + 2V = 0V$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\quad$$

$I.\quad$ Am Punkt t_3

$$U_{A}(t_1) \ = -\quad { 1 \over {\tau} } \quad \ \cdot \int_{t_0}^{t_1} U_E \ dt \ + \ U_{A}(t_0)$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\quad$$
$$U_{A}(t_1) \ = -{ 1 \over {5 ms} } \quad \cdot (-2V) \ \cdot [t]_{10ms}^{20ms} + 0V = -2V$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\quad$$