Sinus:

$f := 1000$

1000

$T := \frac{1}{f}$

$\frac{1}{1000}$

$u_1 := 5 \cdot \sin(2 \cdot \mathrm{Pi} \cdot f \cdot t)$

$5 \sin(2000 \pi t)$

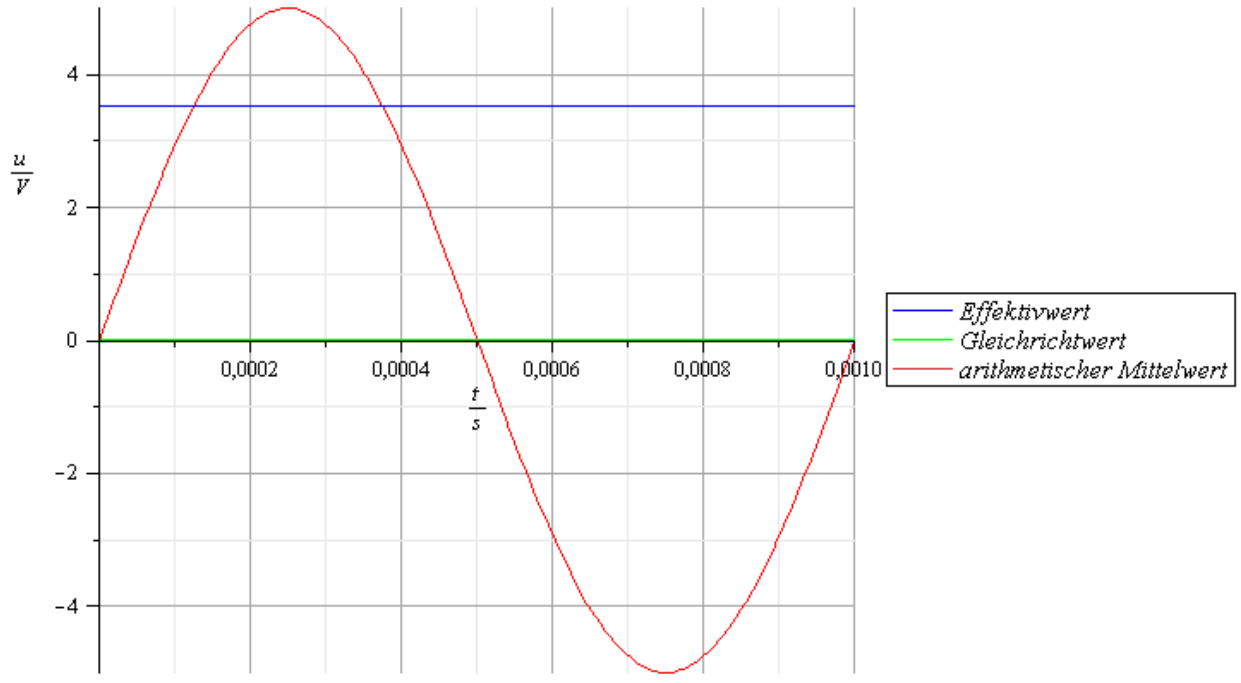
$u_{eff} := evalf\left(\sqrt{\frac{1}{T} \cdot \int_0^T u_1^2 \, dt}\right)$

3.53553390

$u_{gl} := evalf\left(\int_0^T \mathrm{abs}(u_1) \, dt\right)$

0.00318309886

$u_{ari} := evalf\left(\sqrt{\int_0^T u_1 \, dt}\right)$



Dreieckspannung:

$$u_1 := \begin{cases} \frac{5}{0.25} \cdot t & 0 \le t \le 0.25 \\ -\frac{5}{0.25} \cdot t + 10 & 0.25 < t \le 0.75 \\ \frac{5}{0.25} \cdot t - 20 & 0.75 < t \le 1 \end{cases}$$

$$\begin{cases} 20.00000000t & 0 \le t \text{ and } t \le 0.25 \\ -20.00000000t + 10 & 0.25 < t \text{ and } t \le 0.75 \\ 20.00000000t - 20 & 0.75 < t \text{ and } t \le 1 \end{cases} \qquad 0 \le t \text{ and } t \le 0.75$$

$T := 1$

$$1$$

$$u_{eff} := evalf\left(\sqrt{\frac{1}{T} \cdot \int_0^T u_1^2 \, dt}\right)$$

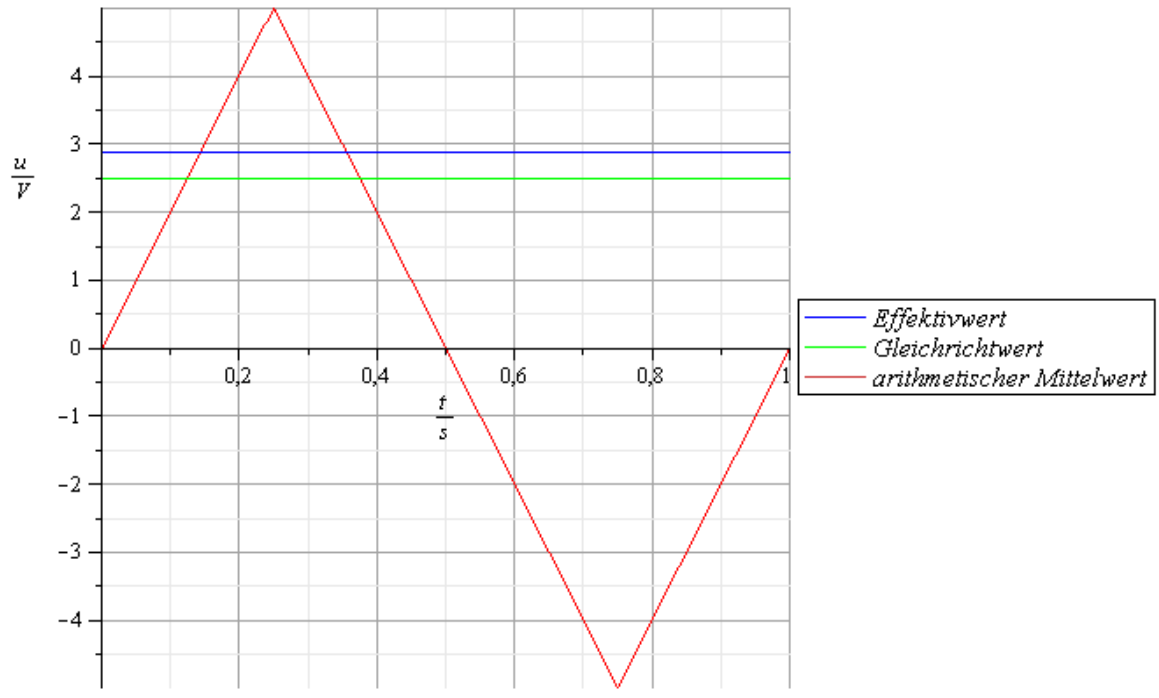
$$2.88675134($$

$$u_{gl} := evalf\left(\int_0^T \mathrm{abs}(u_1) \, dt\right)$$

$$2.50000000($$

$$u_{ari} := evalf\left(\sqrt{\int_0^T u_1 \, dt}\right)$$

$$0.$$



Rechteckspannung:

$T := 1$

$T = 1$

$$u_1 := \begin{cases} 5 & 0 \le t \le \frac{T}{2} \\ 0 & \frac{T}{2} < t \le T \end{cases}$$

$$\begin{cases} 5 & 0 \le t \text{ and } t \le \frac{1}{2} \\ 0 & \frac{1}{2} < t \text{ and } t \le 1 \end{cases}$$

$$u_{eff} := evalf\left(\sqrt{\frac{1}{T} \cdot \int_0^T u_1^2 \, dt}\right)$$

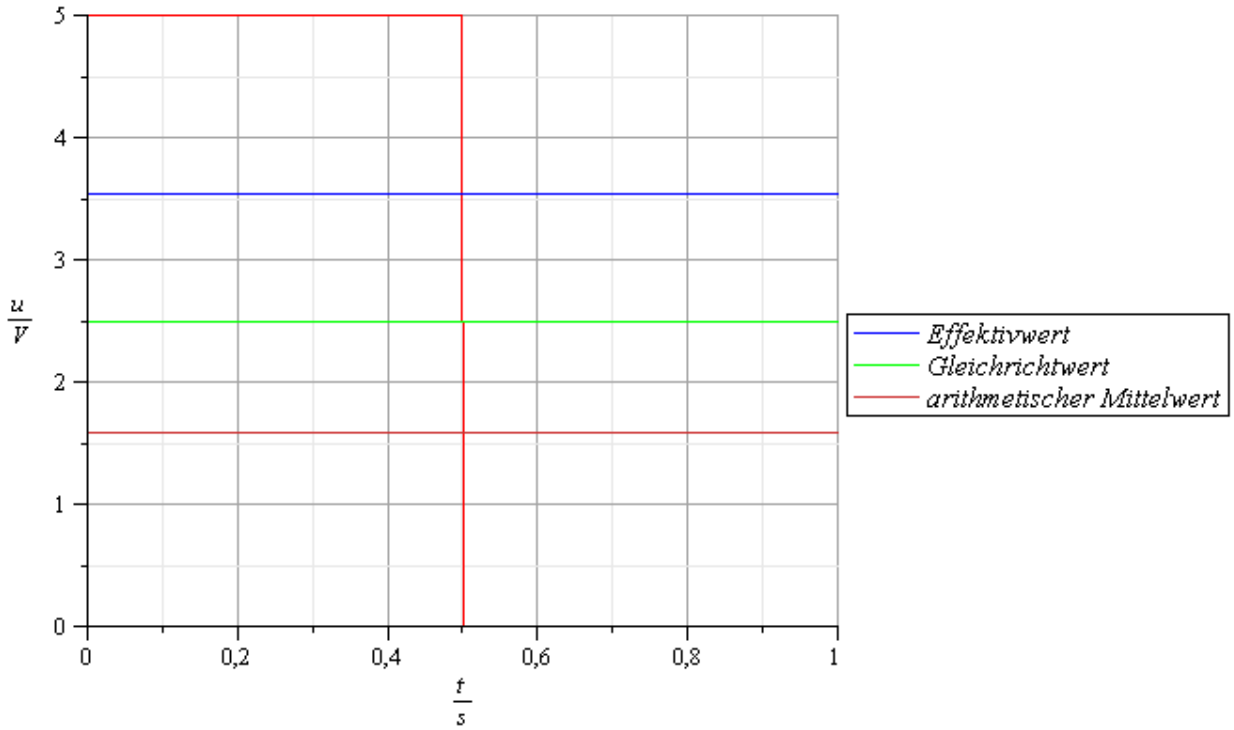
3.53553390

$$u_{gl} := evalf\left(\int_0^T abs(u_1) \, dt\right)$$

2.500000000

$$u_{ari} := evalf\left(\sqrt{\int_0^T u_1 \, dt}\right)$$

1.581138830



Einweggleichrichtung:

$$T := \frac{1}{50}$$

$$\frac{1}{50}$$

$$u_1 := \begin{cases} 15 \cdot \sin(2 \cdot \mathrm{Pi} \cdot 50 \cdot t) & 0 \le t \le \frac{T}{2} \\ 0 & \frac{T}{2} < t \le T \end{cases}$$

$$\begin{cases} 15 \sin(100 \pi t) & 0 \le t \text{ and } t \le \frac{1}{100} \\ 0 & \frac{1}{100} < t \text{ and } t \le \frac{1}{50} \end{cases}$$

$$u_{eff} := evalf\left(\sqrt{\frac{1}{T} \cdot \int_0^T u_1^2 \, dt}\right)$$

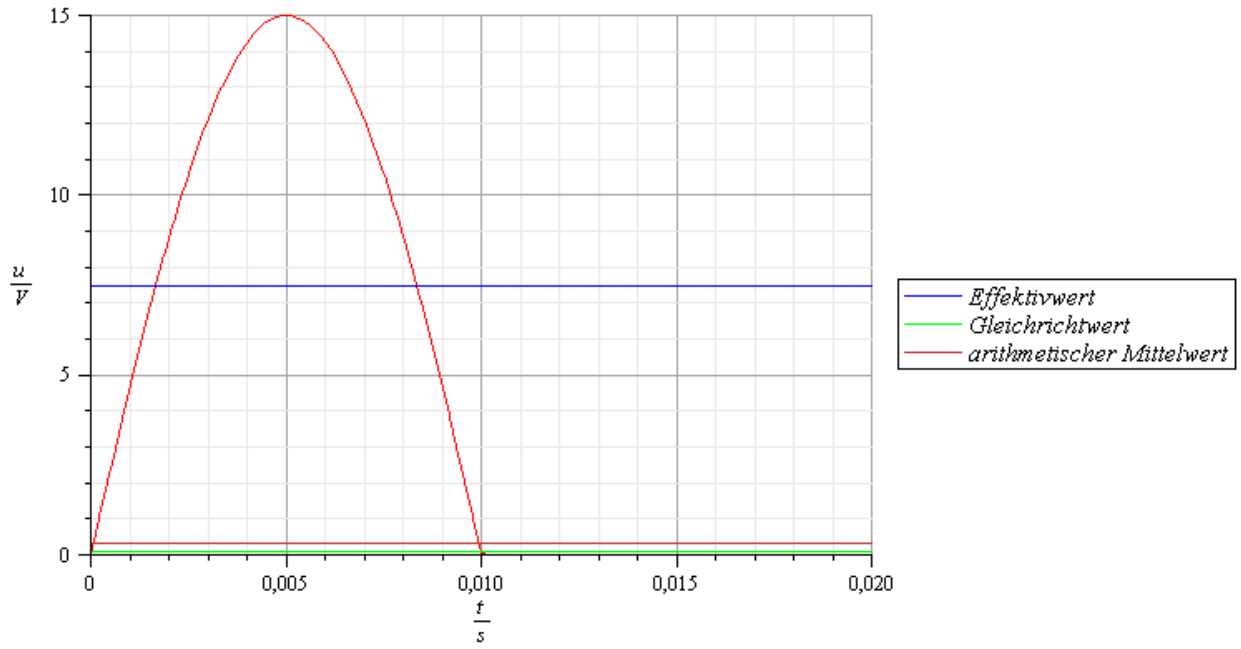
7.500000000

$$u_{gl} := evalf\left(\int_0^T \mathrm{abs}(u_1) \, dt\right)$$

0.0954929658

$$u_{ari} := evalf\left(\sqrt{\int_0^T u_1 \, dt}\right)$$

0.309019361



Zweiwegegleichrichtung:

$$T := \frac{1}{50}$$

$$\frac{1}{50}$$

$$u_1 := \mathrm{abs}(15 \cdot \sin(2 \cdot \pi \cdot 50 \cdot t))$$

$$15\,|\sin(100\,\pi\,t)|$$

$$u_{eff} := evalf\left(\sqrt{\frac{1}{T} \cdot \int_0^T u_1^2\,dt}\right)$$

$$10{,}61$$

$$u_{gl} := evalf\left(\int_0^T \mathrm{abs}(u_1)\,dt\right)$$

$$0.190985931'$$

$$u_{ari} := evalf\left(\sqrt{\int_0^T u_1\,dt}\right)$$

$$0.437019372'$$