Illustrate lossy wave propagation

Define some constants

$u := 3 \cdot 10^{8}$ (m/s) $\quad V\_pos := 1$ (V) $\quad V\_neg := 1$ (V) $\quad \omega := 377$ (rad/s)

$\lambda := 2 \cdot \pi \cdot \frac{u}{\omega}$ (m) $\quad \alpha := 3 \cdot 10^{-8}$ (Np/m) $\quad \beta := \frac{\omega}{u}$ (rad/m) $\quad T := \frac{2\pi}{\omega}$ (s)

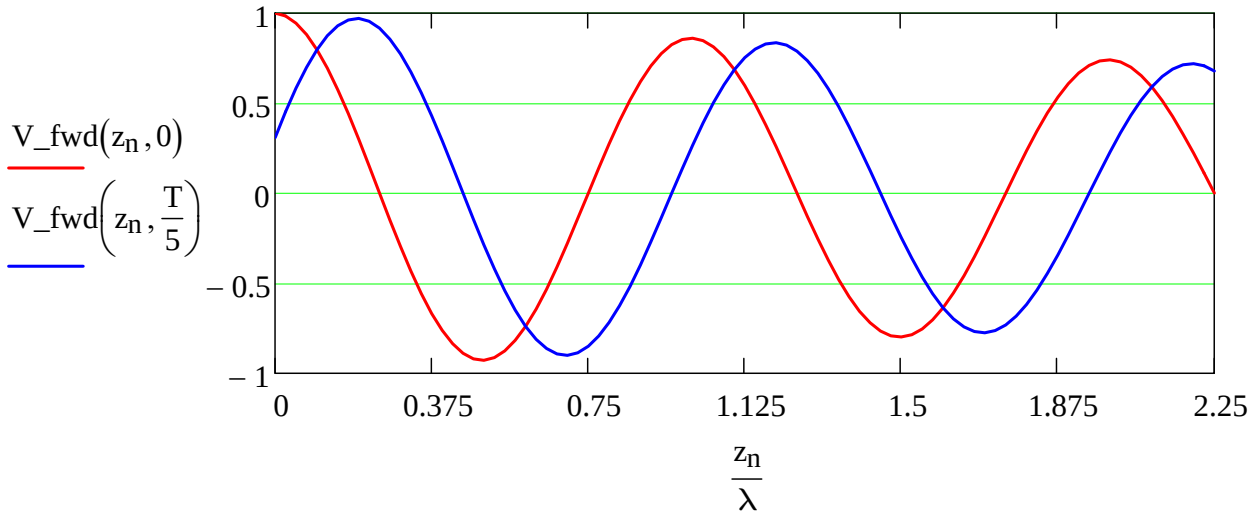
Define functions for the forward and backward components of voltage

$n := 0 .. 90 \quad z_n := \frac{1.5 \cdot \lambda \cdot n}{60}$

$V\_fwd(x, t) := V\_pos \cdot e^{-\alpha \cdot x} \cdot \cos(\omega \cdot t - \beta \cdot x)$

$V\_bwd(x, t) := V\_neg \cdot e^{\alpha \cdot x} \cdot \cos(\omega \cdot t + \beta \cdot x)$

Forward Traveling Wave



Backward Traveling Wave