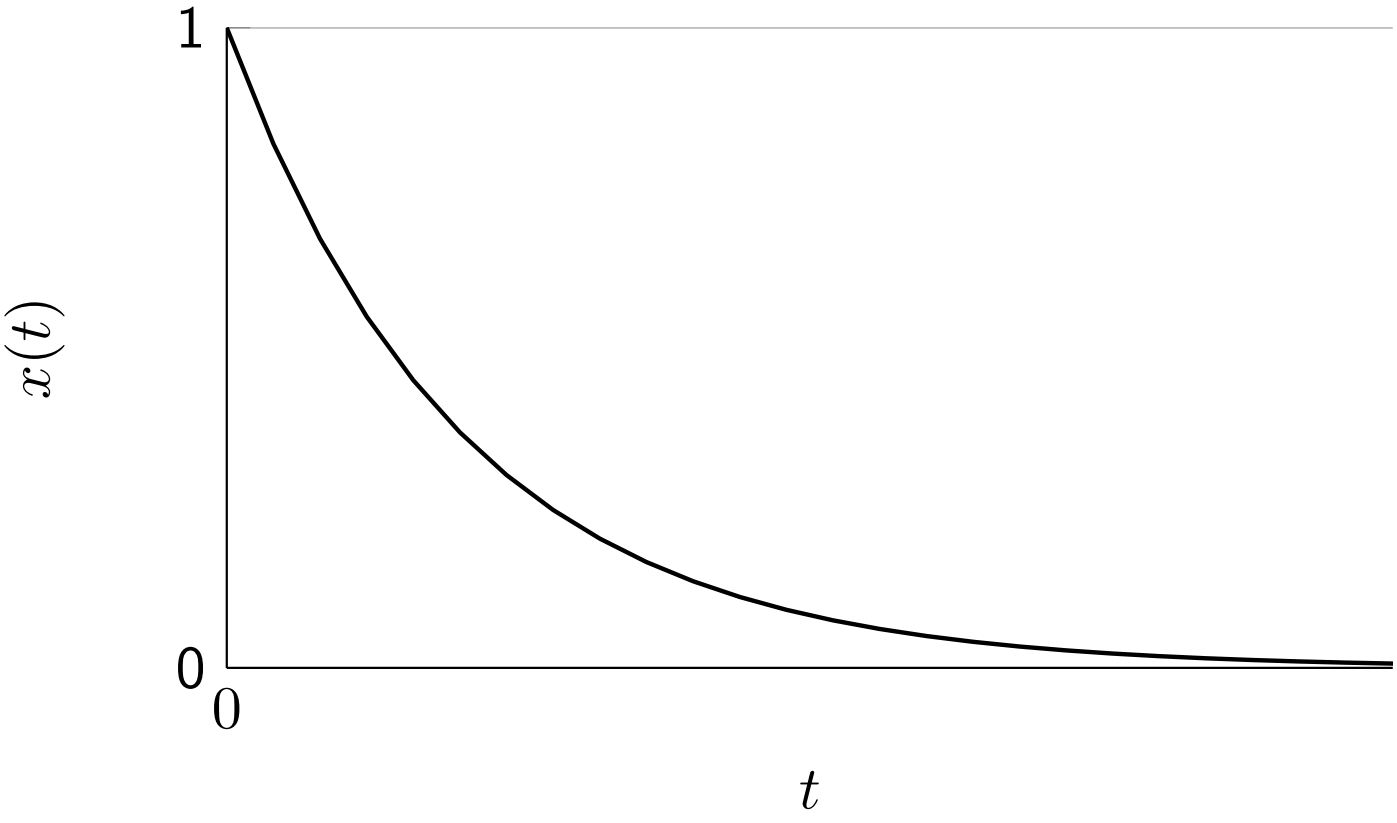
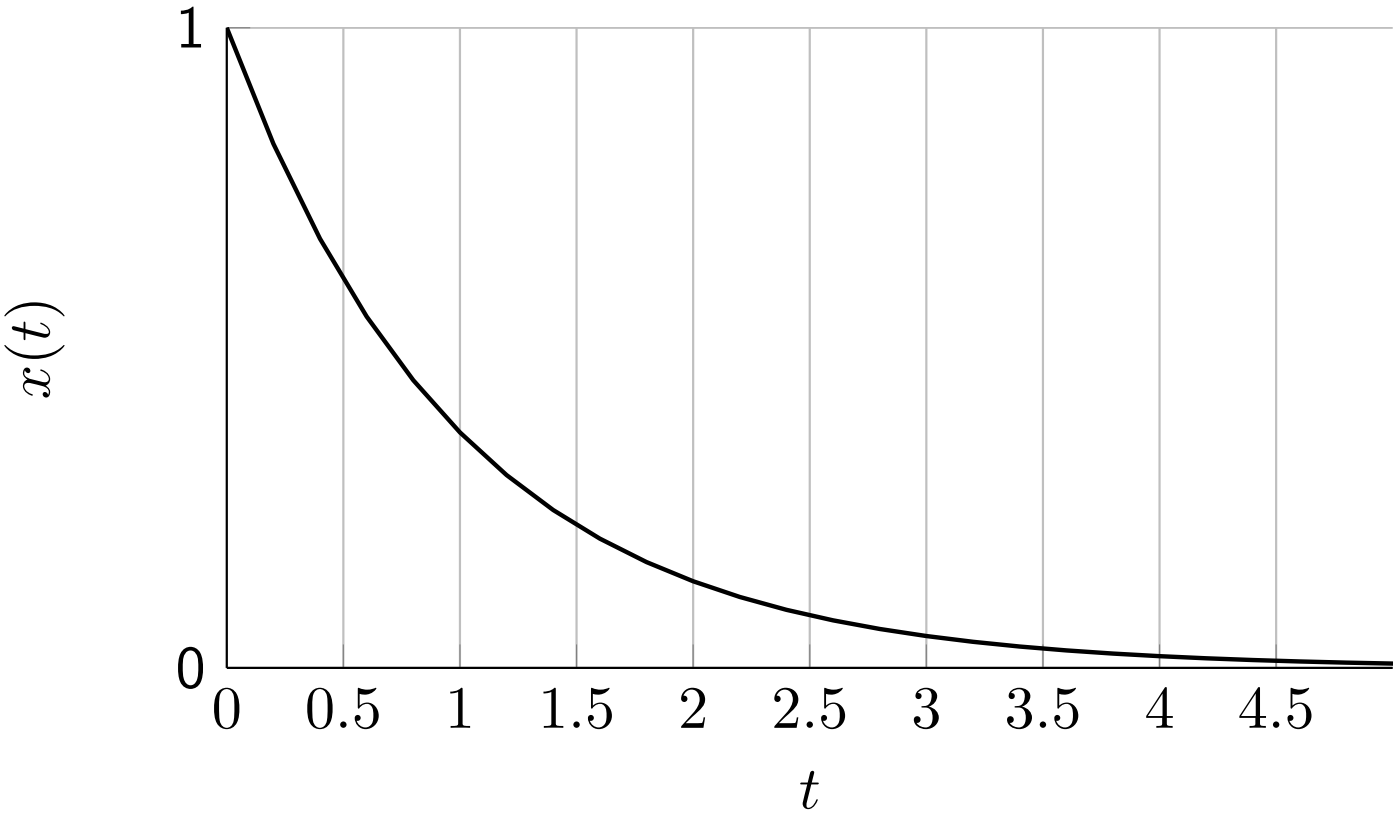
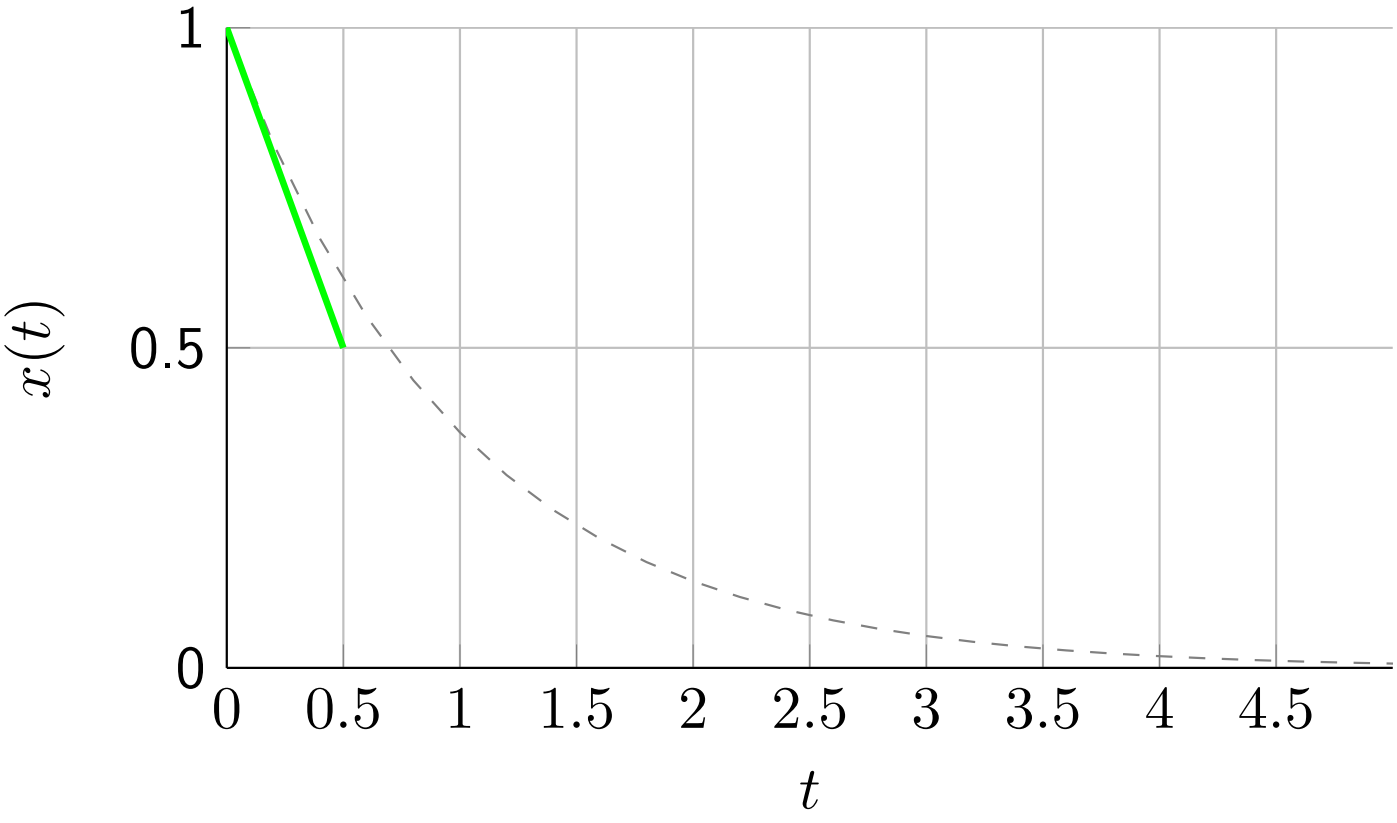
euler,ex



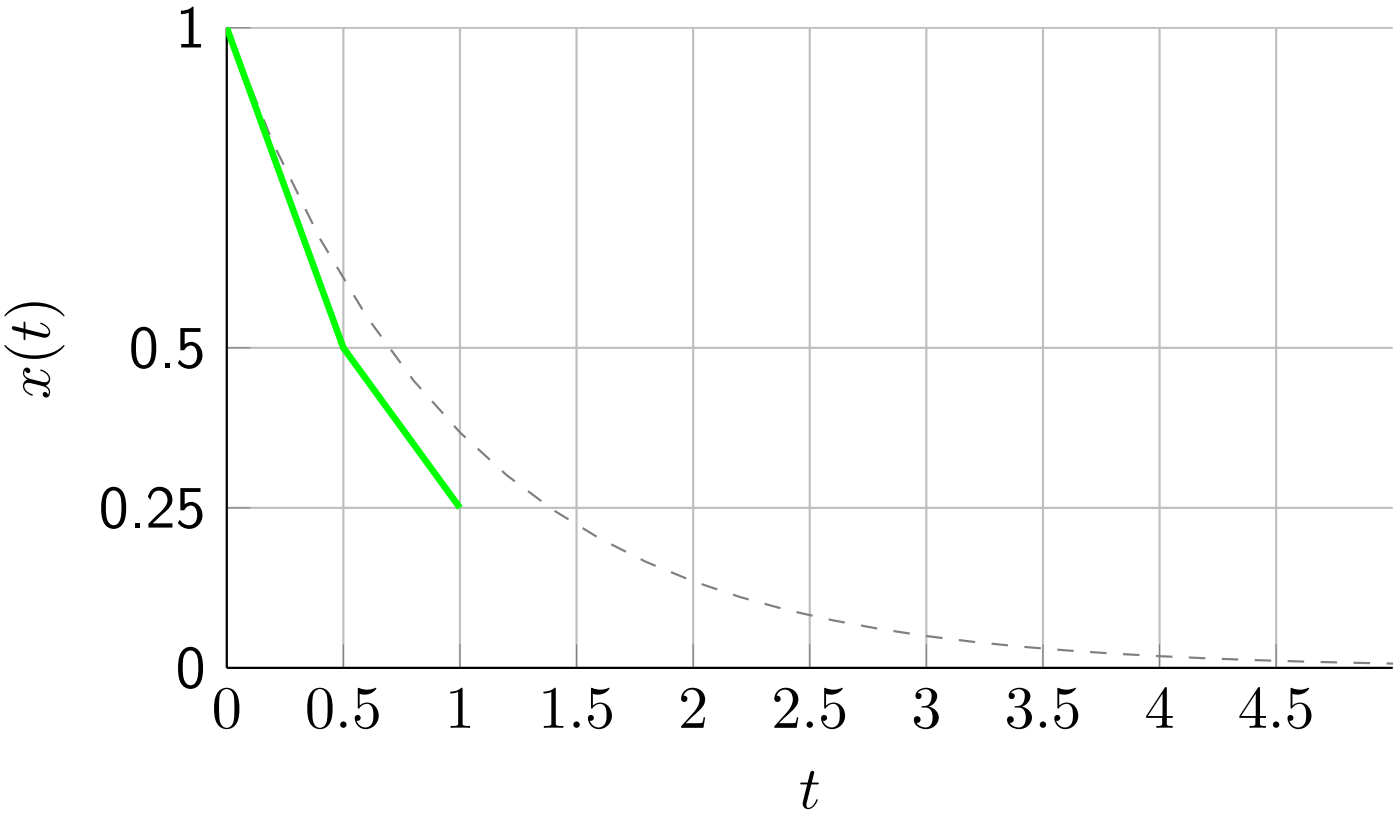
euler,ex



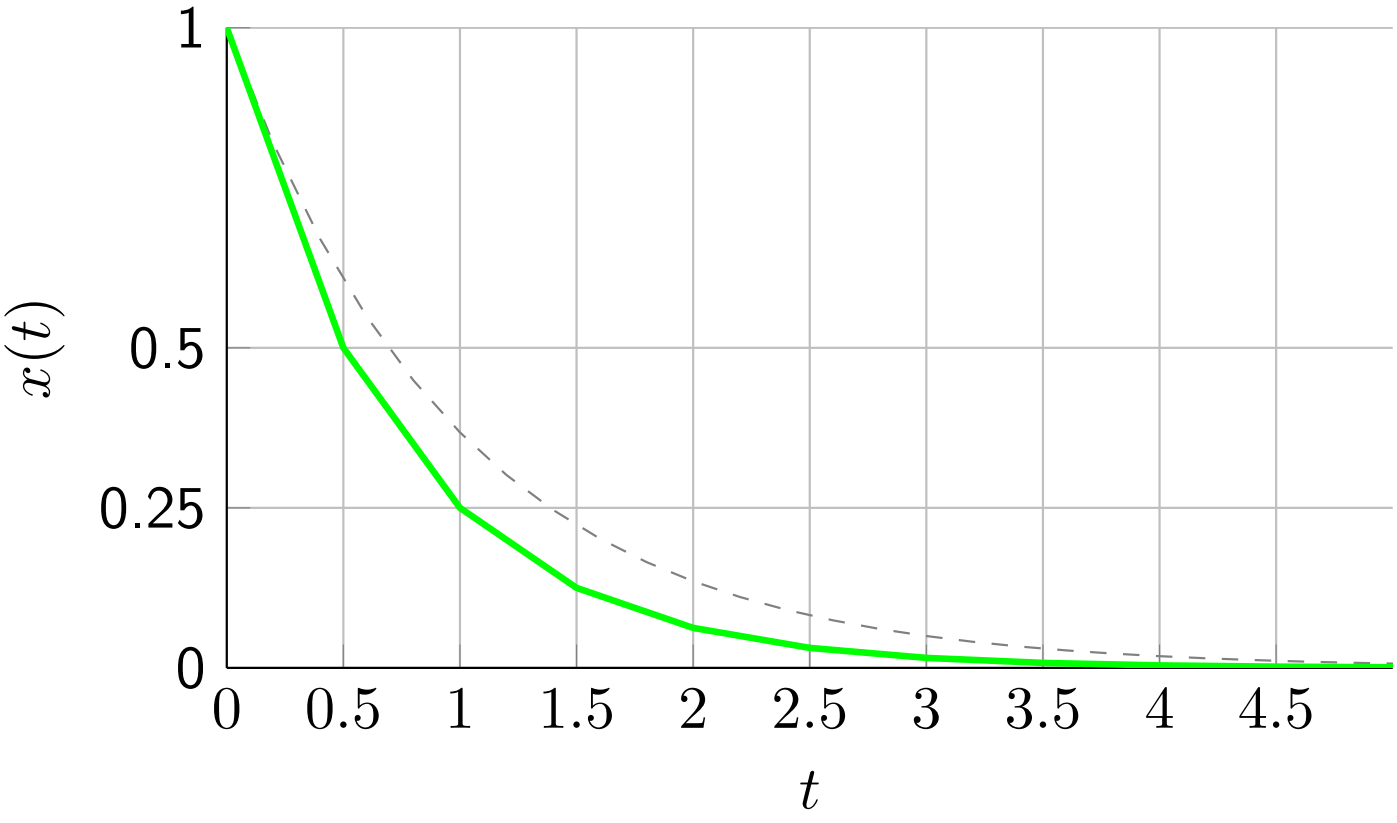
euler,ex



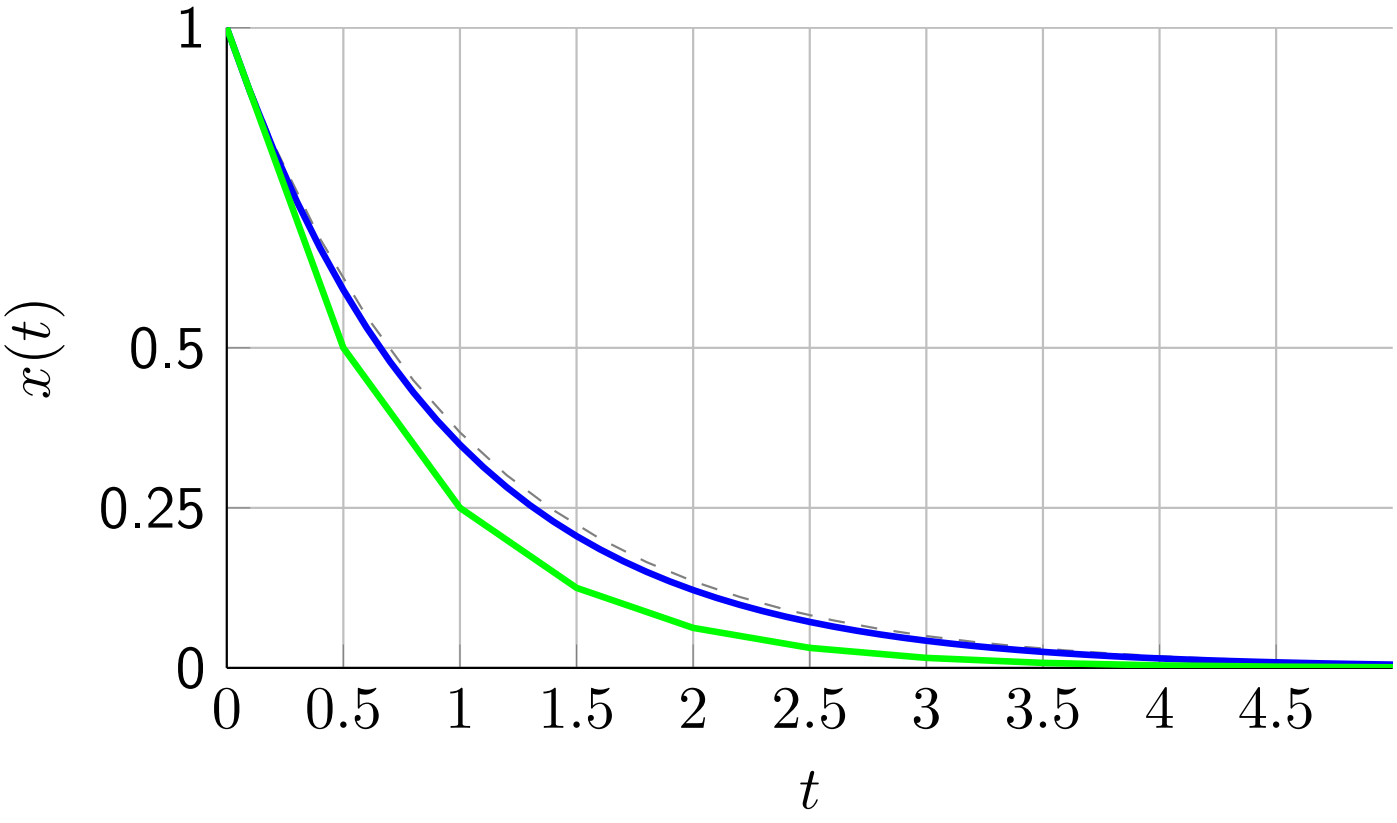
euler,ex



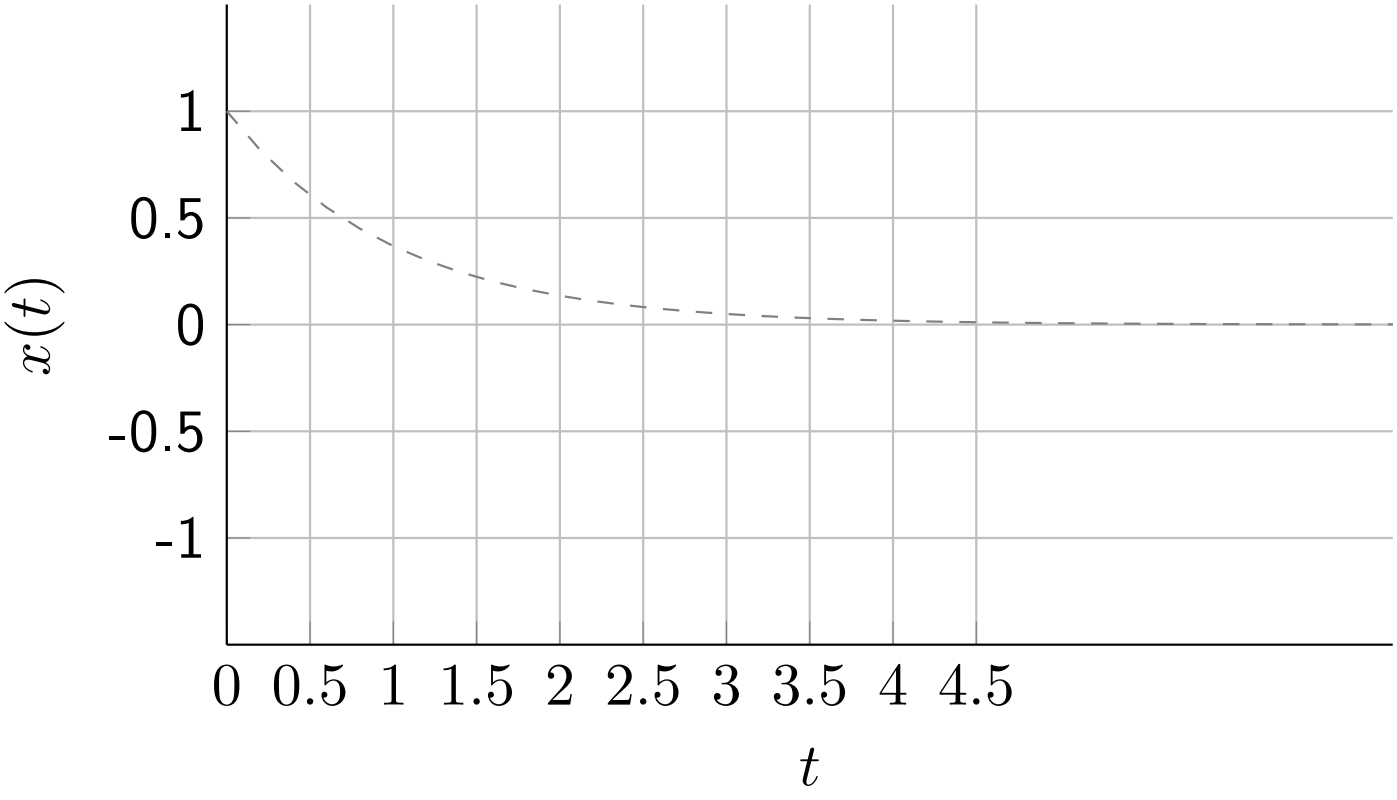
euler,ex



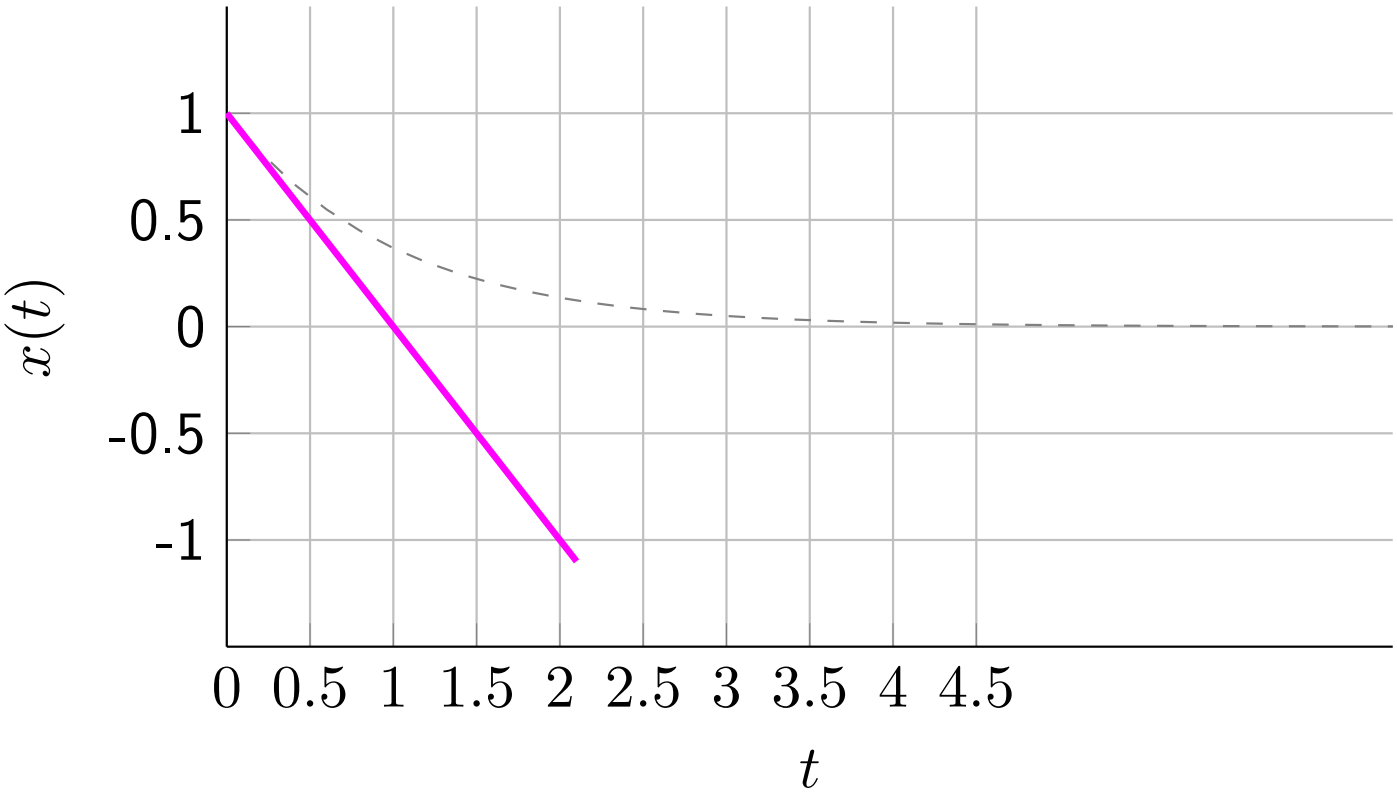
euler,ex



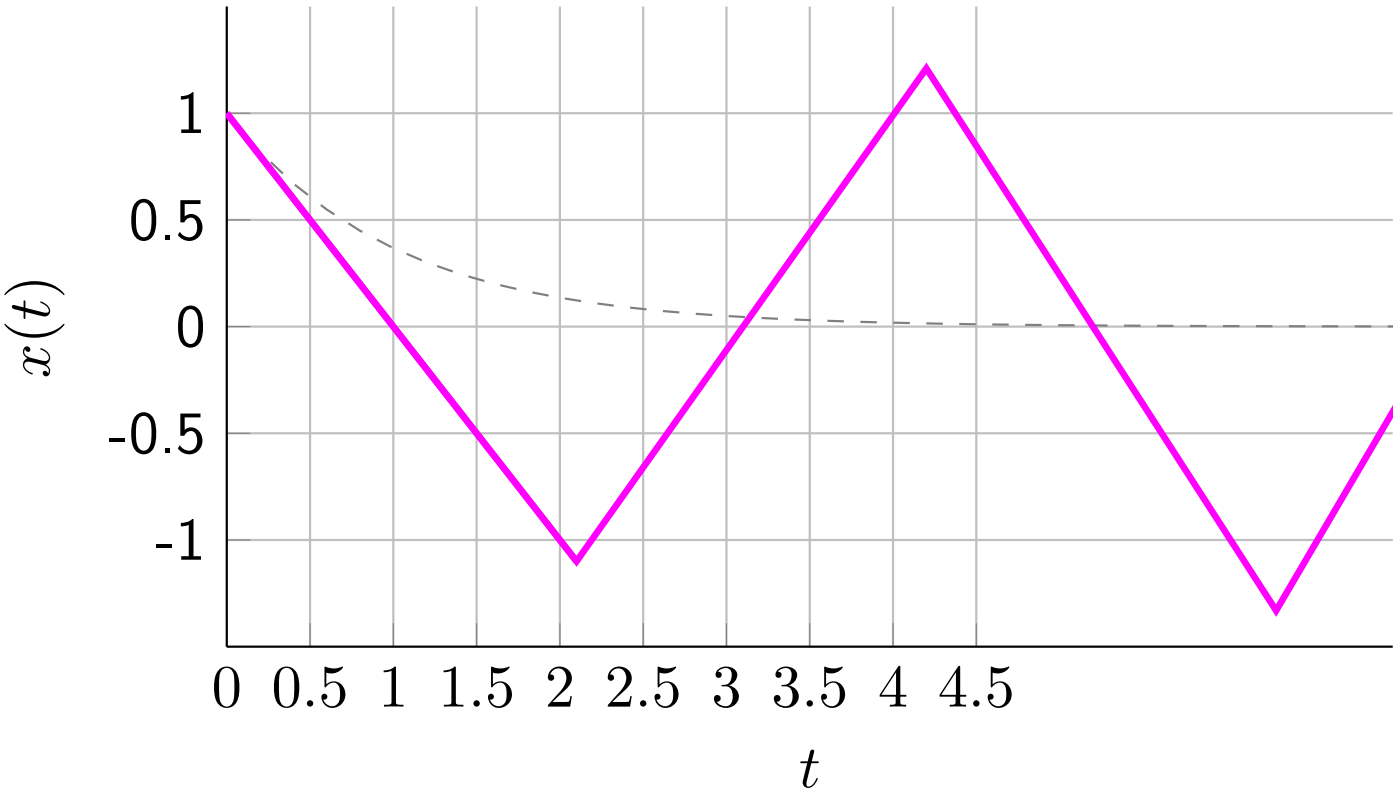
euler,ex



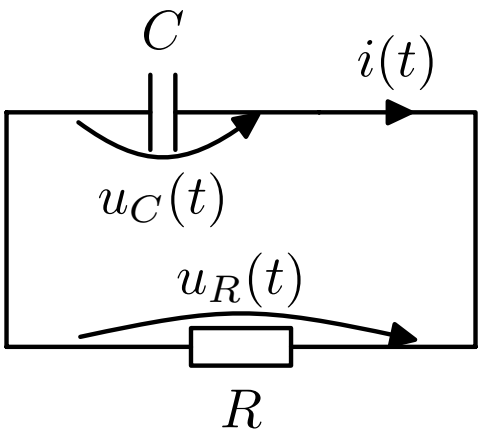
euler,ex



euler,ex



Beispiel



$$u_C(t) = u_R(t) := u(t) \tag{1}$$

$$i(t) = \frac{-u_R(t)}{R} \tag{2}$$

$$u_C(t) = u_0 + \frac{1}{C}\int_0^t i(t)\mathrm{d}t \tag{3}$$

(2) in (3), differenzieren, auflösen:

$$\dot{u}(t) = \frac{-1}{RC}\,u(t), \quad u(0) = u_0 \tag{4}$$

umbenennen:

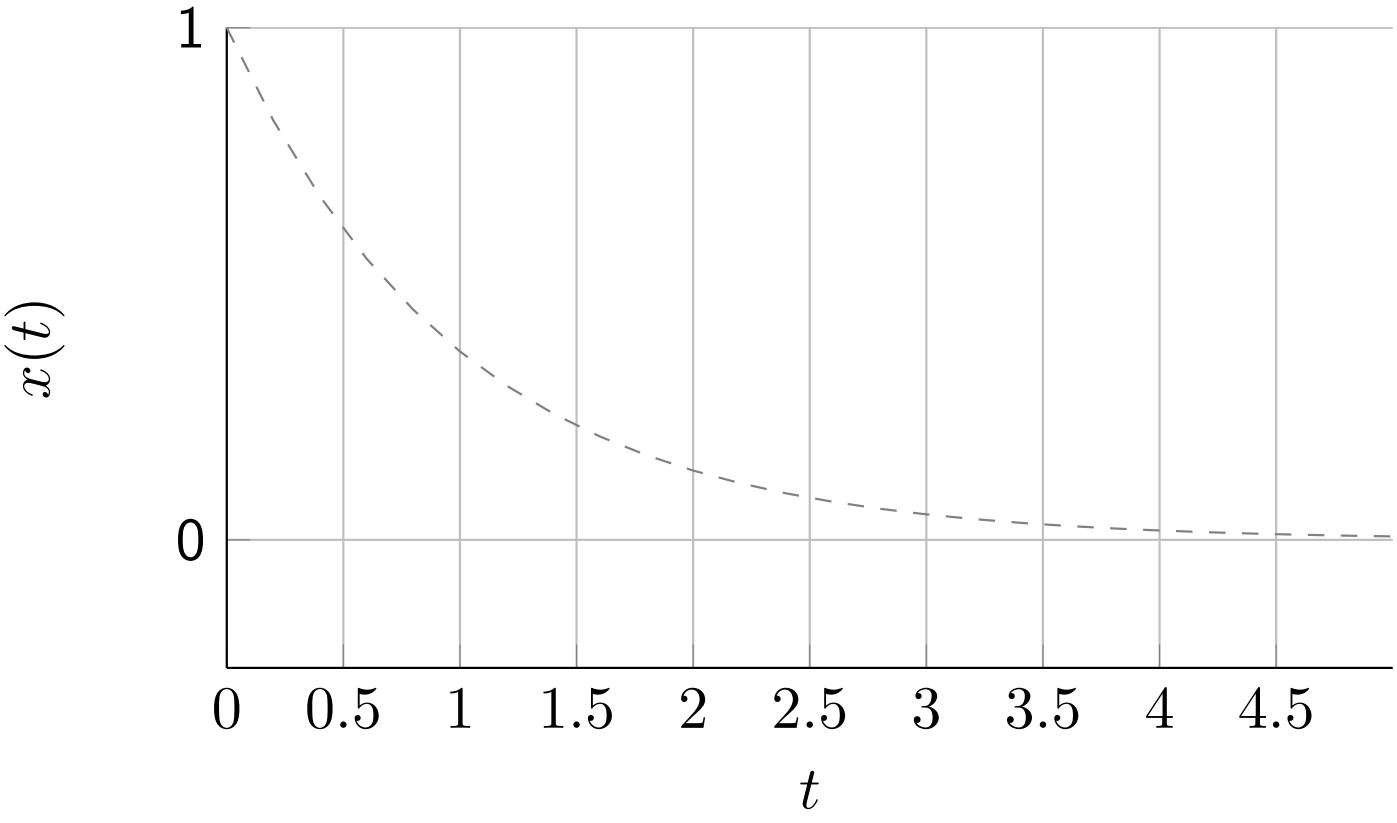
$$\dot{x} = \lambda x, \quad x(0) = x_0 \tag{5}$$

hier: $\dot{x} = -x$ (6)

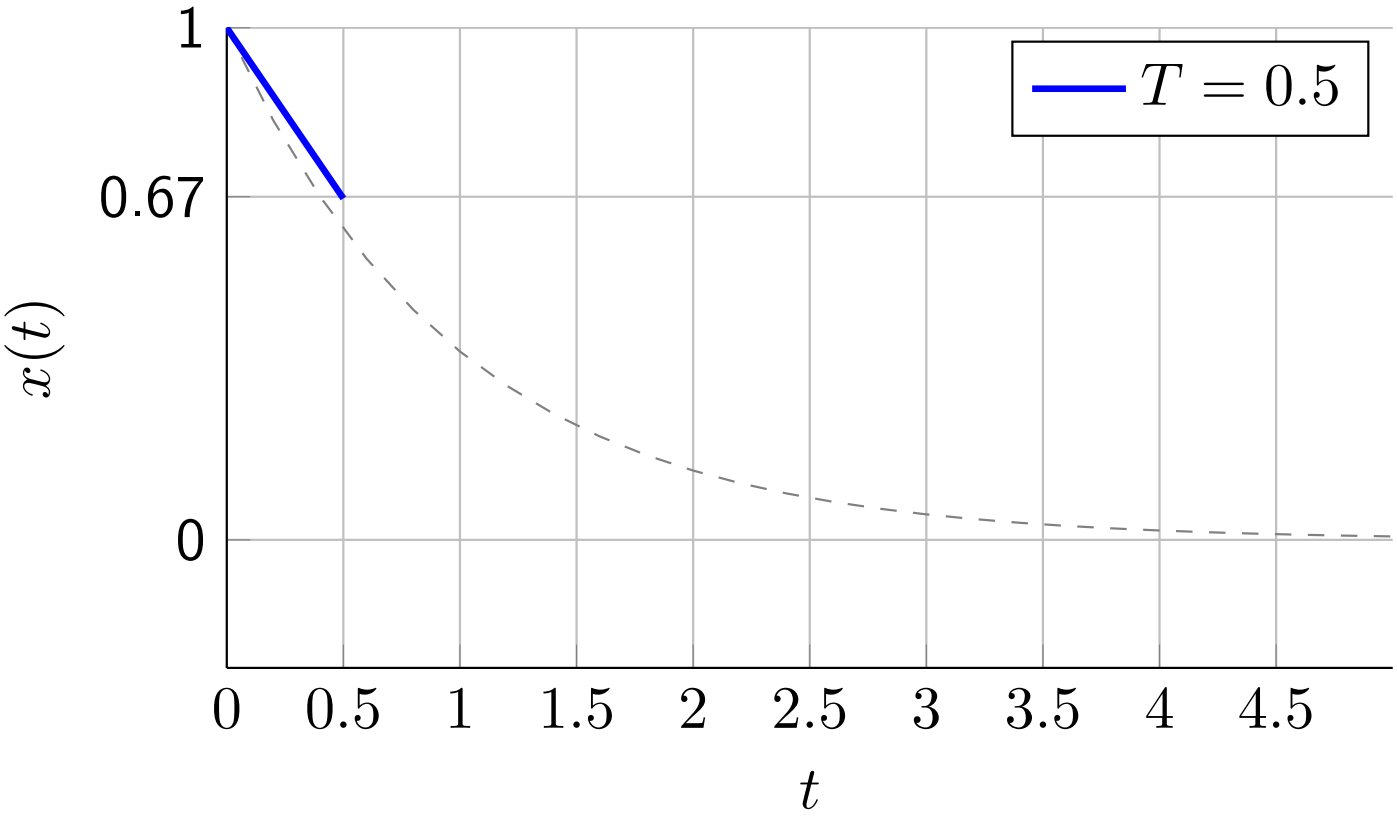
Echte Lösung:

$x(t) = x_0 e^{\lambda t}$

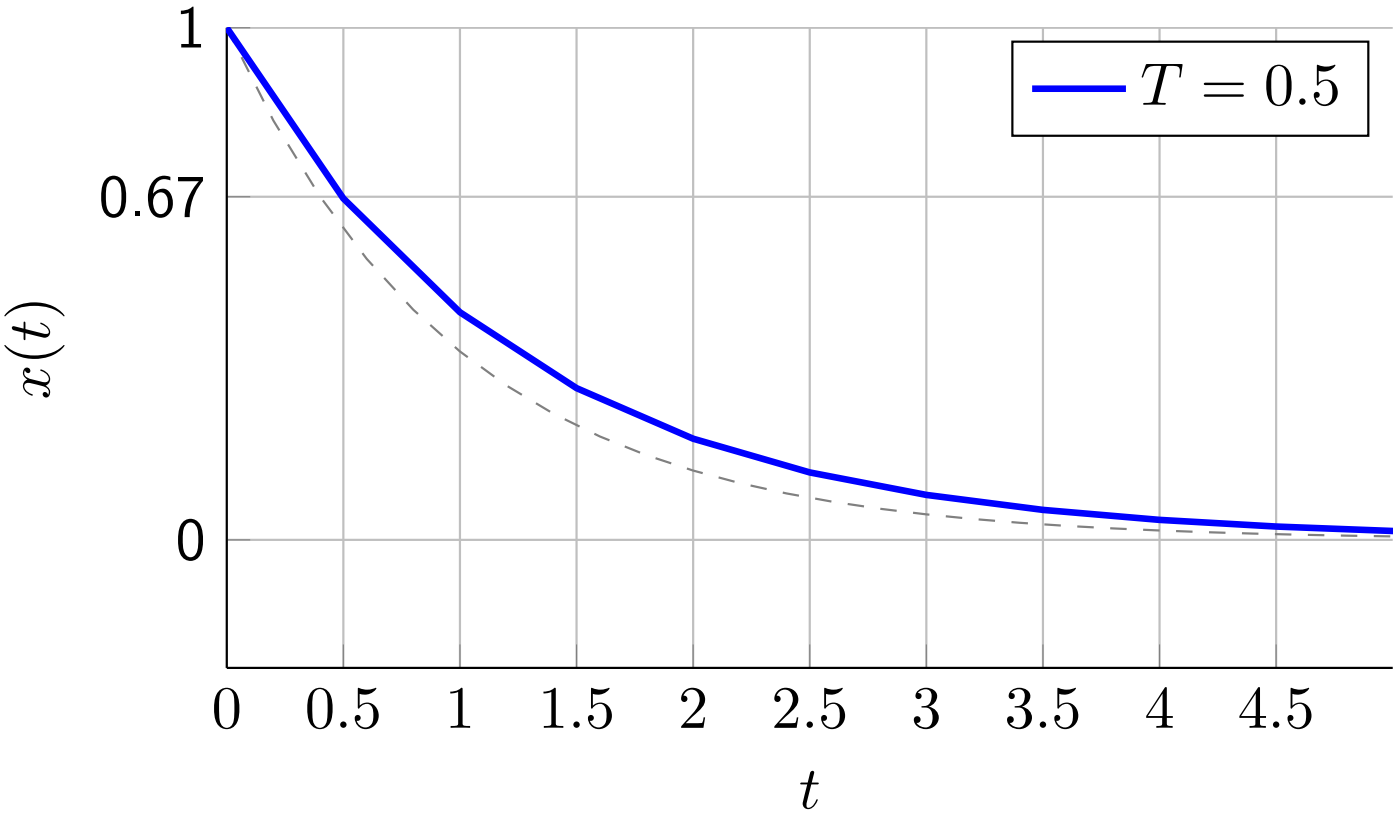
euler,im



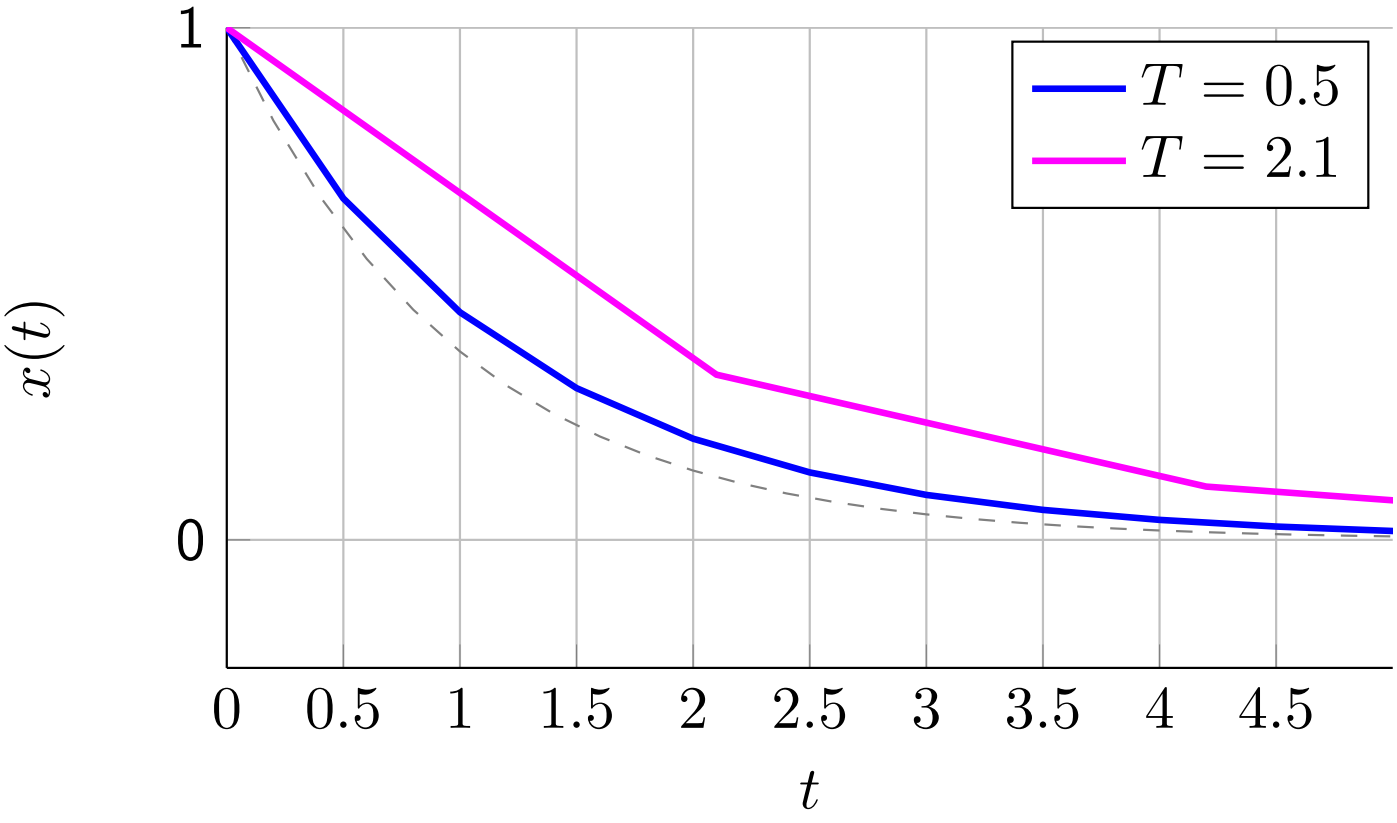
euler,im



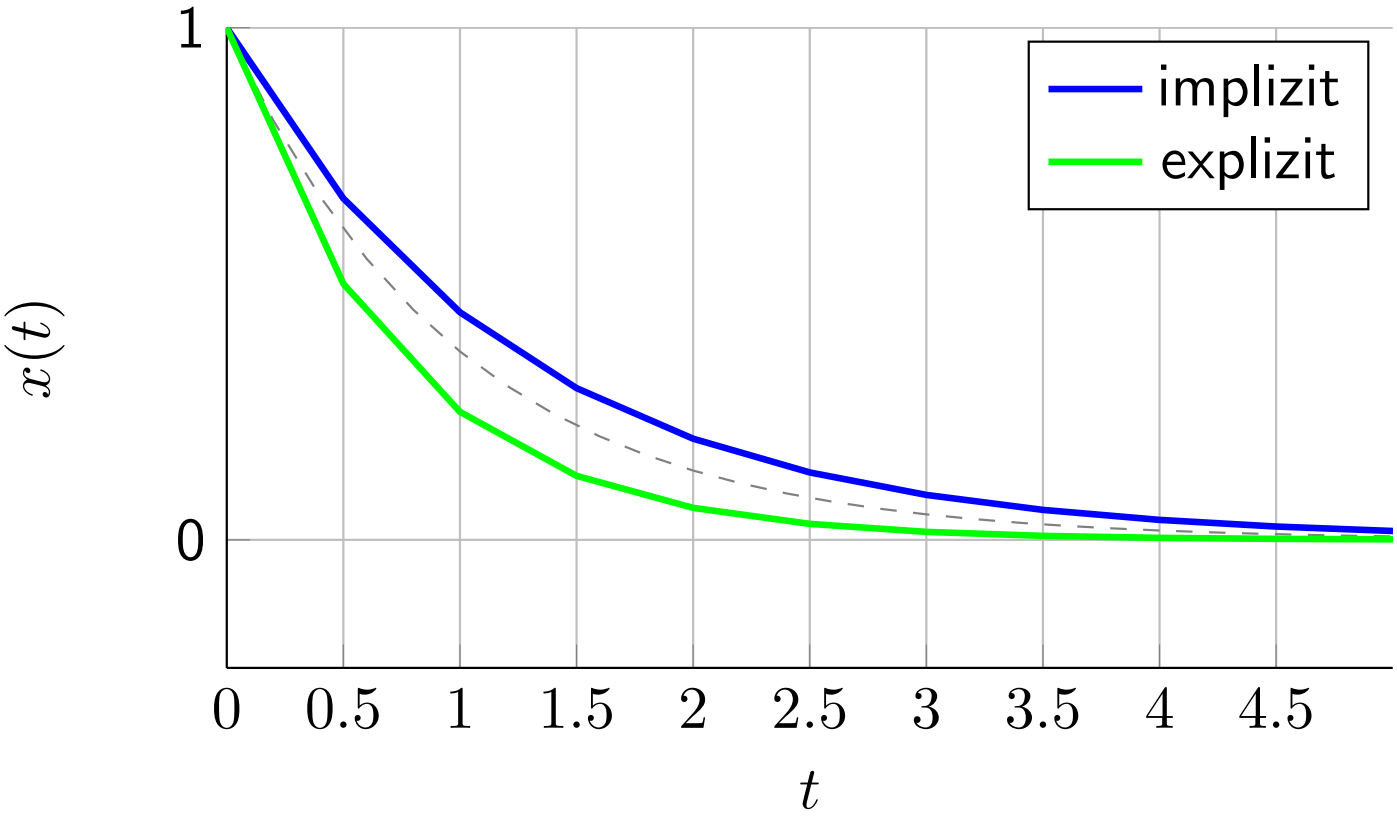
euler,im



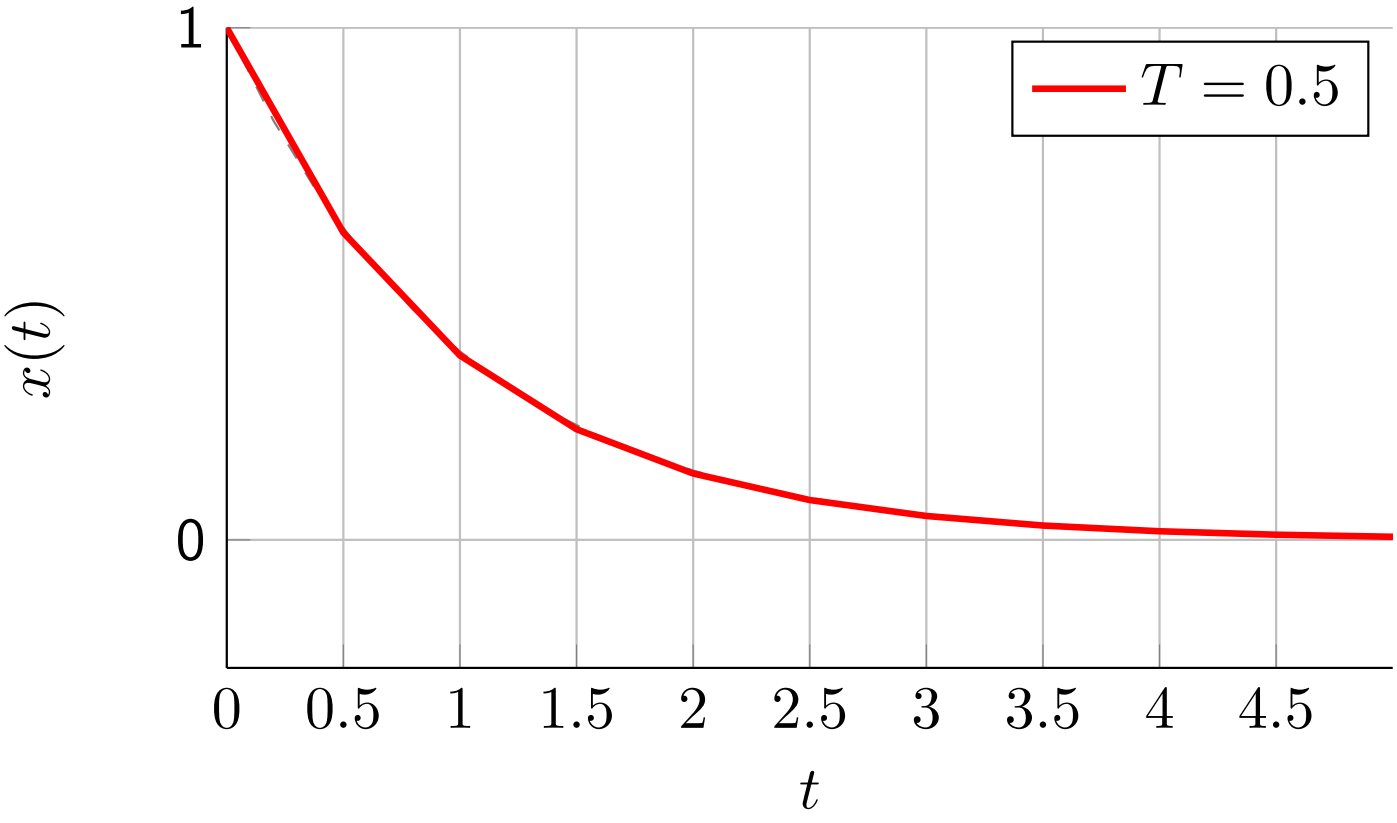
euler,im



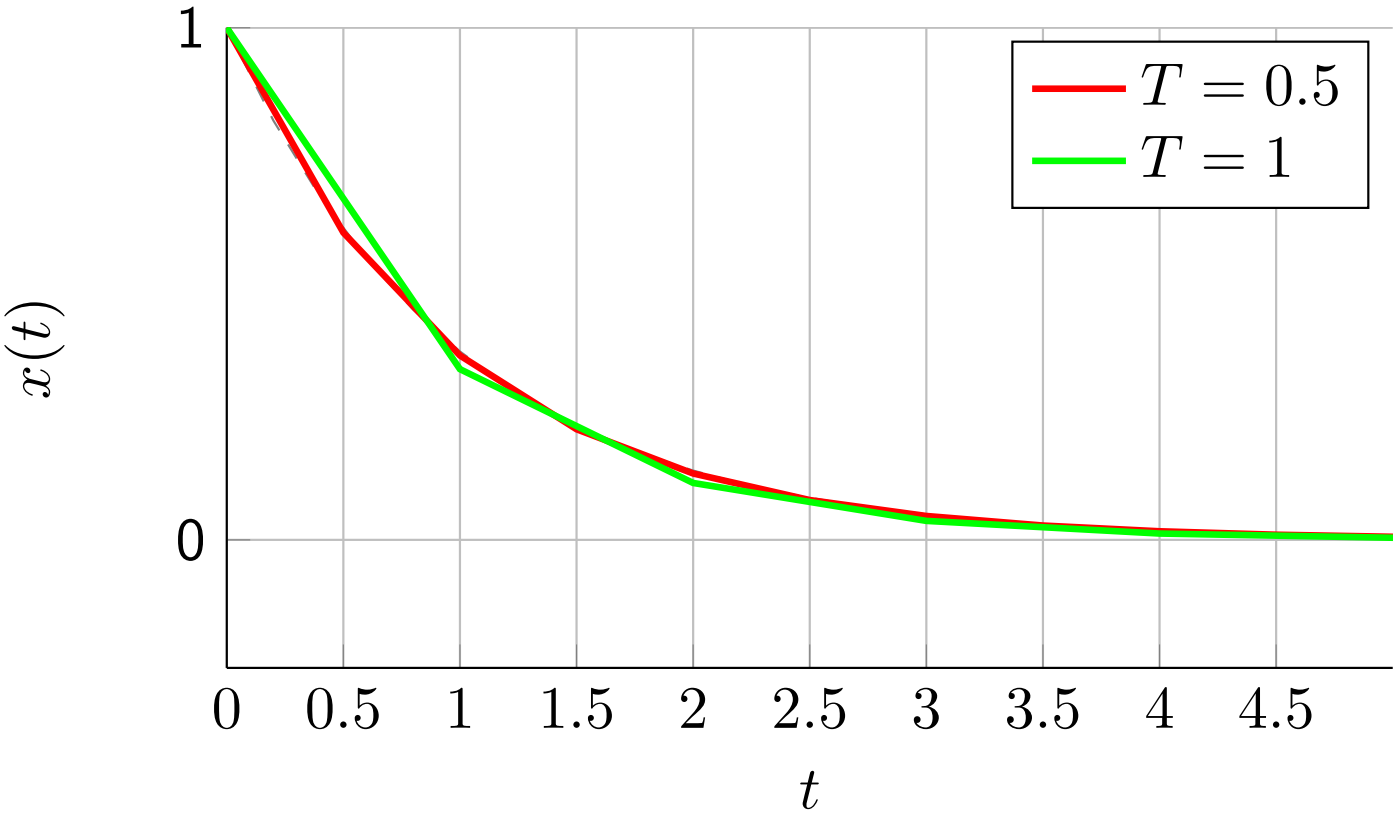
euler,im



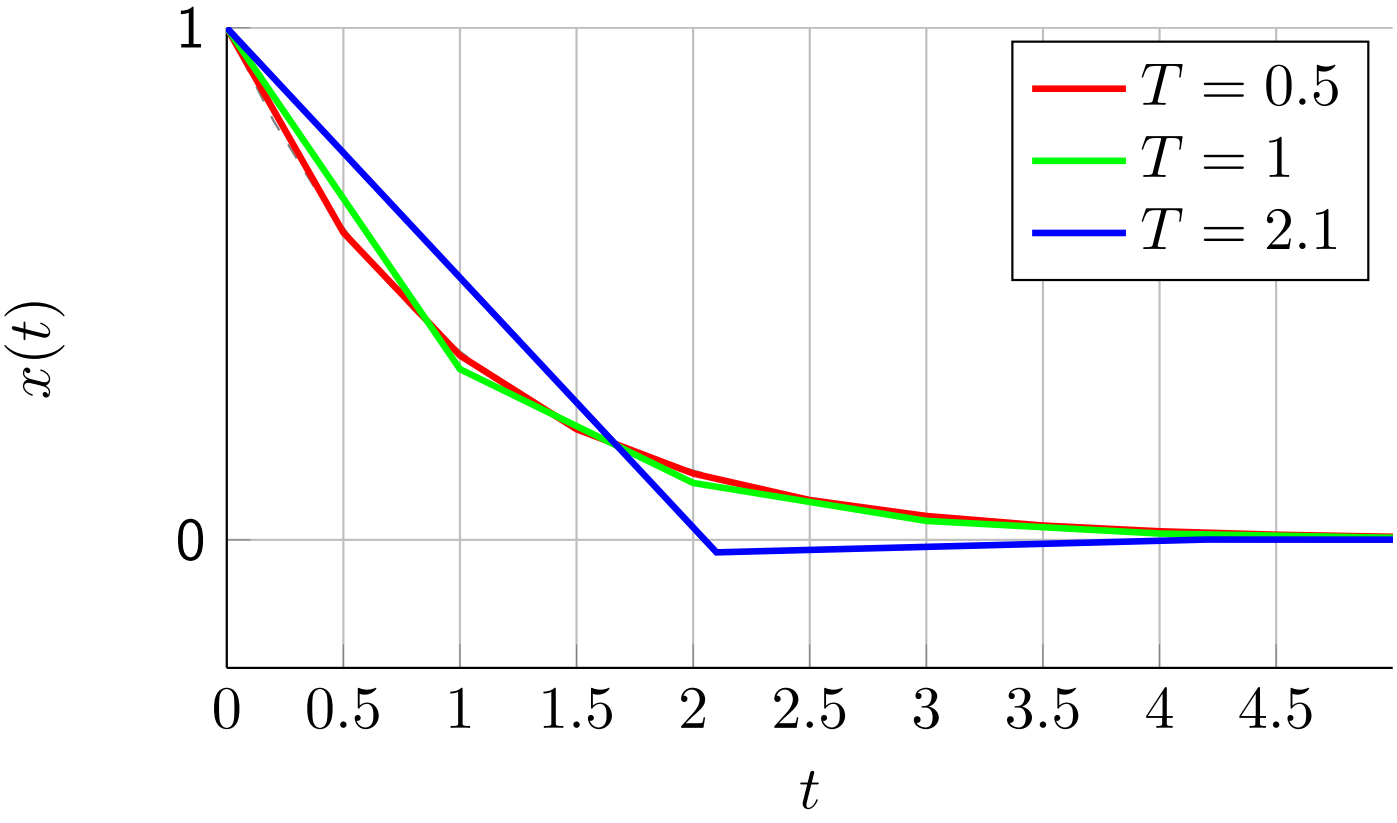
Trapez



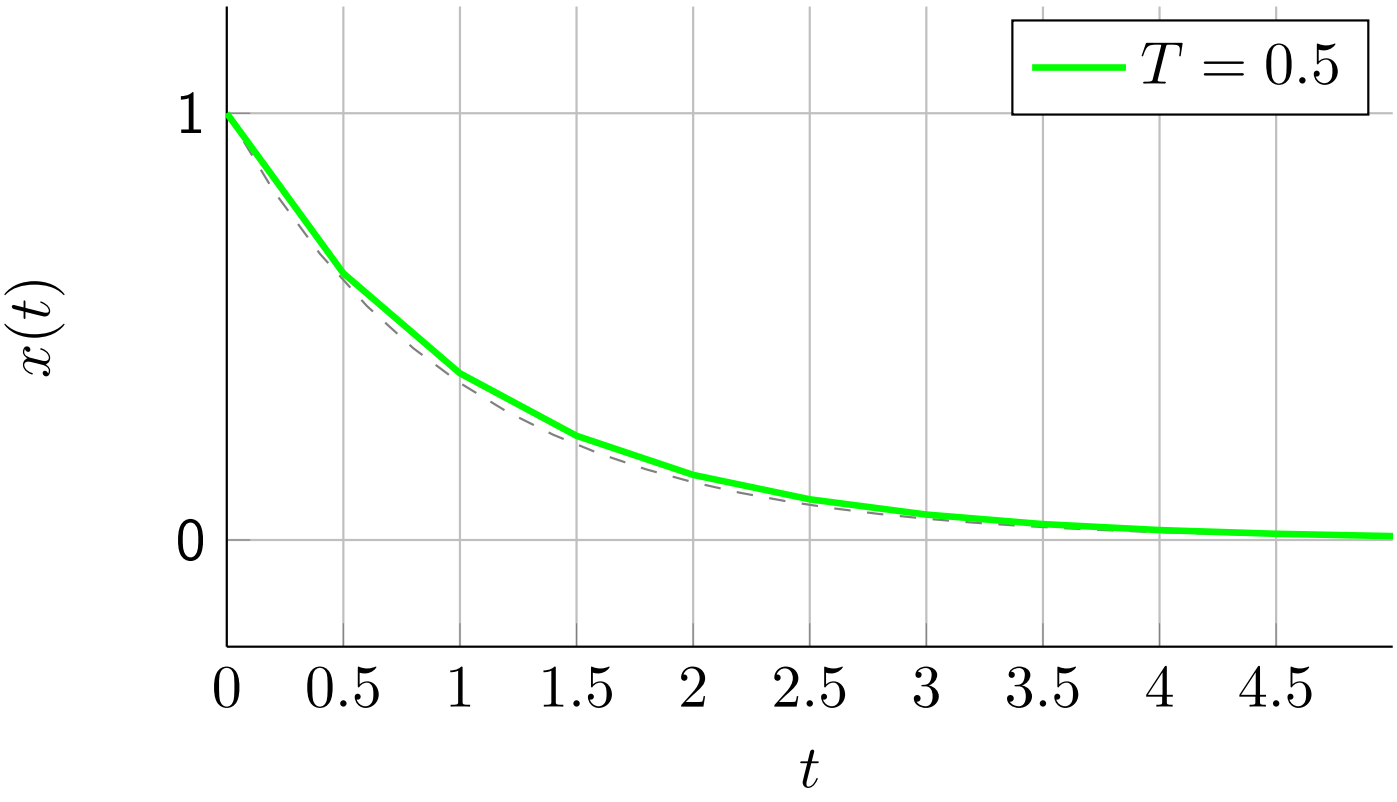
Trapez



Trapez



Heun



Heun