

Taking inverse transform

$$x(t) = \frac{1}{3}u(t) + \frac{5}{3}e^t \cos \sqrt{0.5}t + \frac{8}{3\sqrt{0.5}} e^{-t} \sin \sqrt{0.5}t$$

$$x(t) = (0.33 + 1.667 e^{-t} \cos 0.71t + 3.77 e^{-t} \sin 0.71t) u(t)$$

$\forall t > 0$