3.07*

fredag 26 januari 2024 21:45

$$f(t) = t\, e^{-2t} \underbrace{\cos 3t}_{g(t)}\, \theta(t)$$

s. 40 (ex 3.11)

$$g(t) \mapsto \frac{s}{s^2+9} = G(s)$$

$$h(t) = e^{-2t} g(t) \mapsto \frac{s+2}{(s+2)^2+9} = H(s)$$

$$t\,h(t) \mapsto -\frac{d}{ds} H(s) =$$

$$= -\frac{(s+2)^2+9-(s+2)\cdot 2(s+2)}{((s+2)^2+9)^2} =$$

$$= -\frac{(s+2)^2+9-2(s+2)^2}{((s+2)^2+9)^2} =$$

$$= -\frac{-(s+2)^2+9}{((s+2)^2+9)^2} =$$

$$= \frac{(s+2)^2-9}{((s+2)^2+9)^2} = \frac{s^2+4s-5}{(s^2+4s+13)^2}$$