5. $\frac{\partial y(t)}{\partial t} \Big| \frac{d^2 y(t)}{dt^2} = x(t) - 4y(t) - \frac{4\,dy(t)}{\partial t}$

$y(t) + \frac{\partial y(t)}{dt} \; \ell \; \frac{d^2 y(t)}{dt^2} + \frac{4dy(t)}{dt} + 4y(t) = xt$

$\Rightarrow s^2(y)(s) + 4s\,Y/s + 4\,y(0) = x(s)$

$(s^2 + 4s + 4)\,Y(s) = x(s)$

$G(s) = x(s)$

$G(s) = \frac{y(s)}{x(s)} = \frac{1}{s^2 + 4s + 4}$

$= \frac{1}{(s+2)^2}$

$\omega_n^1 = 4 \Rightarrow \omega n = 2 \text{ rad/sec}$

$2\xi_n = 4 \quad \xi = 1.$

$\Rightarrow x(t) = S(t) \rightarrow y(t)$ dengan demikian

$x(t) = 1 - Y(s) = C(s)\,x(s) = \frac{1}{(s+1)^2} \rightarrow y(t)\; \mathcal{L}^{-1} \frac{1}{s+2}^1$

$= t\,e^{-2t}$

$\boxed{\frac{1}{(s+n)^n} \rightarrow \frac{1}{(n-1)!}\, t^{n-1} e^{-nt}}$

2. $4(y)(t) + \frac{4(dx)t)}{dt}\, y\, \partial = \frac{4y(t)}{dt}.$

$\frac{d_2(t)}{dt} = yt. \quad d^2 y(t) = x(s) - 4(y)(t) - 4\,dy(t)$

$d^2 y(t) + 4dy(t) = xt$

$(s^2 + 4s + 4\;\; y(s) = x(s)$

Laen ditanya
Laen dijawab ??.