

Séries e Equações Diferenciais

Lista 09

1. Nos problemas abaixo, use a definição

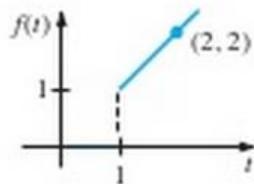
$$\mathcal{A}\{f(t)\} = \int_0^{\infty} e^{-st} f(t) dt$$

para calcular $\mathcal{A}\{f(t)\}$.

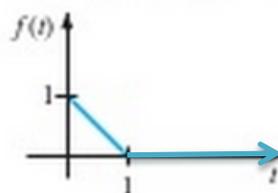
a) $f(t) = \begin{cases} -1, & 0 \leq t < 1 \\ 1, & t \geq 1 \end{cases}$

b) $f(t) = \begin{cases} 4, & 0 \leq t < 2 \\ 0, & t \geq 2 \end{cases}$

c) $f(t) = \begin{cases} \text{sen } t, & 0 \leq t < \pi \\ 0, & t \geq \pi \end{cases}$



d)



e)

f) $f(t) = e^{t+7}$

g) $f(t) = e^{-2t-5}$

h) $f(t) = t \cdot e^{4t}$

i) $f(t) = t^2 \cdot e^{3t}$

j) $f(t) = e^t \cdot \cos t$