Encontrar a transformada de Laplace de $f(t) = t$.

$$\mathcal{L}\{f(t)\} = \int_0^{+\infty} f(t)e^{-st}\ dt = \int_0^{+\infty} te^{-st}\ dt = -\frac{te^{-st}}{s}\bigg|_0^{+\infty} + \frac{1}{s}\int_0^{+\infty} e^{-st}\ dt = -\frac{te^{-st}}{s}\bigg|_0^{+\infty} - \frac{e^{-st}}{s^2}\bigg|_0^{+\infty},$$

que converge para $s > 0$.

Logo $\boxed{\mathcal{L}\{t\} = \frac{1}{s^2},\ s > 0}$.

Documento compilado em Thursday 13th March, 2025, 09:43, tempo no servidor.

Sugestões, comunicar erros: "a.vandre.g@gmail.com".