

2.05*

torsdag 25 januari 2024 14:39

$$p_b(t) = \frac{1}{b} (\theta(t) - \theta(t-b))$$

8.14.17

$$\int_{-\infty}^{\infty} p_b(t) e^{-st} dt = \begin{cases} \int_0^b \frac{1}{b} e^{-st} dt, & \text{då } 0 < t < b \\ 0, & \text{annars} \end{cases}$$

$$\int_{-\infty}^{\infty} p_b(t) e^{-st} dt = \int_0^b \frac{1}{b} e^{-st} dt =$$

$$= \frac{1}{b} \left[-\frac{e^{-st}}{s} \right]_0^b = \frac{1}{b} \left(-\frac{e^{-sb}}{s} + \frac{e^0}{s} \right) =$$

$$= \underline{\underline{\frac{1}{bs} (1 - e^{-sb})}}$$