



Item Navigation

Heaviside Step Function

(a) Use the step-up function $u_c(t)$ to construct a step-down and a step-up, step-down function.

(b) Prove that $\mathcal{L}\{u_c(t)f(t-c)\} = e^{-cs}F(s)$.

(c) Consider the piecewise continuous function given by

$$f(t) = \begin{cases} t, & \text{if } t < 1; \\ 1, & \text{if } t \geq 1. \end{cases}$$

(i) Express $f(t)$ in a single line using the Heaviside function.

(ii) Find $F = F(s)$.

✓ **Completed**

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