

13.1 Find the Laplace transform of the function

$$f(t) = te^{-at}\delta(t-1) \quad \text{CS}$$

SOLUTION:

$$\mathcal{L}[f(t)] = \int_0^{\infty} te^{-at} e^{-st} s(t-1) dt = te^{-(s+a)t} \Big|_{t=1}$$

$$\boxed{\mathcal{L}[f(t)] = e^{-(s+a)}}$$