

13.32 Find the inverse Laplace transform $f(t)$ if $\mathbf{F}(s)$ is

$$\mathbf{F}(s) = \frac{se^{-s}}{(s+4)(s+8)}$$

SOLUTION:

$$F(s) = e^{-s} \left[\frac{k_1}{s+4} + \frac{k_2}{s+8} \right] \quad \begin{cases} k_1 = \frac{-4}{4} = -1 \\ k_2 = \frac{-8}{-4} = 2 \end{cases}$$

$$F(s) = e^{-s} \left[\frac{-1}{s+4} + \frac{2}{s+8} \right]$$

$$f(t) = 2e^{-8(t-1)} - e^{-4(t-1)} u(t-1)$$