Unit 3 Lesson 7

- We define the Laplace transform for some input function $f(t)$ as

$$(\mathcal{L} f)(s) = \int_{0^-}^{\infty} f(t) e^{-st} \, dt = F(s)$$

- Likewise, we have that

$$L(\delta(t)) = 1$$

and

$$L(\delta(t-a)) = e^{-as} \quad \text{for } a > 0$$

Example Problems

We are asked to compute

$$\mathcal{L}((1+t)^2);$$

$$\ldots = \mathcal{L}(1+2t+t^2)$$

equals

$$\frac{1}{s} + \frac{2}{s^2} + \frac{2}{s^3}$$

by linearity.