

Example 2.7

Q:  $x(0) = ?$

Solution

$$x(0) = \lim_{z \rightarrow \infty} X(z)$$

$$= \lim_{z \rightarrow \infty} \frac{(1 - e^{-T})z}{(z - 1)(z - e^{-T})}$$

$$= \lim_{z \rightarrow \infty} \frac{(1 - e^{-T})z}{z^2 - (e^{-T} + 1)z + e^{-T}} = 0$$