Example 3-1

Q: $x(t) = e^{-t}$

$x(t)$ → $X(s) = ?$ → S_T → $x^*(t) = ?$ ⇒ $X^*(s) = X(z) = ?$

Solution Table.

#4 $a = 1$ $\quad X(s) = \dfrac{1}{s+1}$

$$x^*(t) = x(kT) = e^{-kT}$$

$$X^*(s) = X(z) = \frac{1}{1 - e^{-T} z^{-1}}$$

$$X^*(s) = \frac{1}{1 - e^{-T} e^{-sT}} \qquad z = e^{sT}$$