

fungsi unit step satuan
(unit step function)

$$u(t) \begin{cases} = 0, & t < 0 \\ = 1, & t \geq 0 \end{cases} \quad \mathcal{L}\{u(t)\} = \frac{1}{s}$$

$$u(k) \begin{cases} = 0, & k < 0 \\ = 1, & k \geq 0 \end{cases}$$

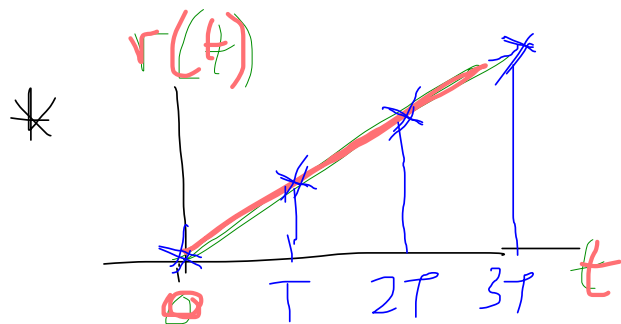
$$U(z) = \mathcal{Z}\{u(k)\} = 1 + z^{-1} + z^{-2} + z^{-3} + \dots$$

$$U(z) = 1 + z^{-1} (1 + z^{-2} + z^{-3} + \dots)$$

$$U(z) = 1 + z^{-1} U(z)$$

$$U(z) - z^{-1} U(z) = 1 \rightarrow (1 - z^{-1}) U(z) = 1$$

$$U(z) = \frac{1}{1 - z^{-1}} = \frac{z}{z - 1}$$



$$r(t) = t \rightarrow \mathcal{L}\{r(t)\} = \frac{1}{s^2}$$

$$r(k) \begin{cases} = 0, & k < 0 \\ = kT, & k \geq 0 \end{cases}$$

t	k	r(k)
0	0	0
T	1	T
2T	2	2T
3T	3	3T

$$\mathcal{Z}\{r(k)\} = R(z) = \frac{Tz}{(z-1)^2}$$

(dari Tabel Trans. Z)