

* Diketahui isyarat undak satuan $u(t)$
 dicuplik dengan periode cuplik T menjadi
 isyarat diskrit. (frek. cuplik = $\frac{1}{T}$)
 sampling rate $f_u(t) = \frac{1}{5}$

$$u(k) = 1, k \geq 0$$



Tentukan $U(z) = \mathcal{Z}\{u(k)\}$

Jawab : $U(z) = \sum_{k=0}^{\infty} z^{-k} \underbrace{u(k)}_{=1, k \geq 0} = 1 + z^{-1} + z^{-2} + z^{-3} + \dots$

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

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

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

$$= \frac{z}{z - 1} \rightarrow \text{baris 3}$$

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

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