

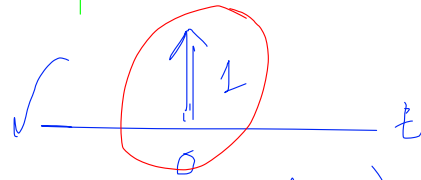
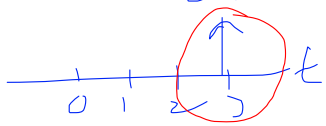
$F(z) = z^{-2} + 2z^{-3}$
 Transf. Z untuk
 isyarat tercuplik

→ $f(t)$ →

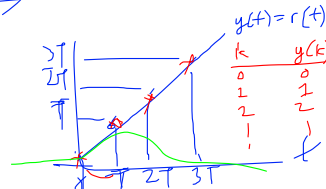
$$f(nT) = \begin{cases} 0, & n \neq 0 \\ 1, & n = 0 \end{cases}$$

$$f(kT) = \begin{cases} 1, & k = 0 \\ 0, & k \neq 0 \end{cases}$$

$$f(kT) = \begin{cases} 1, & k = n \\ 0, & k \neq n \end{cases} \quad F(z) = z^{-n}$$



k	f[kT]
0	1
1	0
2	0
3	0



$$Zy(k) = \frac{Tz}{(z-1)^2} = \frac{Tz}{z^2 - 2z + 1}$$

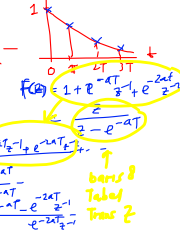
$$\frac{Tz^1 + 2Tz^{-2} + 3Tz^{-3} + 4Tz^{-4} + \dots}{z^2 - 2z + 1}$$

$$\frac{Tz - 2T + Tz^{-1}}{z^2 - 2z + 1} = \frac{2T - Tz^{-1} + Tz^{-2}}{z^2 - 2z + 1}$$

$$\frac{3Tz^{-1} - 2Tz^{-2} + Tz^{-3}}{z^2 - 2z + 1} = \frac{4Tz^{-2} - 2Tz^{-3}}{z^2 - 2z + 1}$$

$$F(s) = \frac{1}{s+a}$$

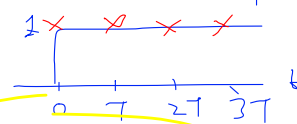
$$f(t) = \mathcal{L}^{-1}\left\{\frac{1}{s+a}\right\} = e^{-at}$$



k	y[k]
0	0
1	5
2	3
3	2
4	0

$$Y(z) = 5z^{-1} + 3z^{-2} + 2z^{-3}$$

Contoh: Tentukan transformasi Z dari cuplikan
 isyarat untuk satuan $u(t)$!



k	u[k]
0	1
1	1
2	1
3	1

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

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

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

$$u(t) = \delta(t) + \delta(t-T) + \delta(t-2T) + \dots$$

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

Transformasi Z:

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

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

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

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