Subject: Cont. v.o.l. lec 1: chapter 1. Date: //
7-Transformin X(Z) = \(\times \chi(nT) \) Z-n
where: n = 0, 1, 2, T > Sampling time.
Por sequence, Ts=1 sec:
$\left(2(1) = \sum_{n=0}^{\infty} \chi(n) Z^{-n}\right)$
n=o
DImpulse: S(n) Z.T > 1
4
DUnit step:- U(n) 7.T Z
$\Im Ramp: tu(t) \xrightarrow{Z.T} \xrightarrow{Z.T} $ $(Z-1)^2$
a Polynominal: anu(n) Z.T. Z
5 Expenential: e u(t) ZT Z-e-at
(a) $(z-a)^2$
D Sin Soidal:- Sin(wt) ZoT, Z SinwT Z=2Z CoswT+1
(3 tos (wt) Z.T, Z2-12 COSWT+12

Date: / /

Subject:

* Inverse Z-Transform

1 Partial Praction methods

ex: Find the inverse Z-transform of 2(Z)= (Z-1)(Z+2)

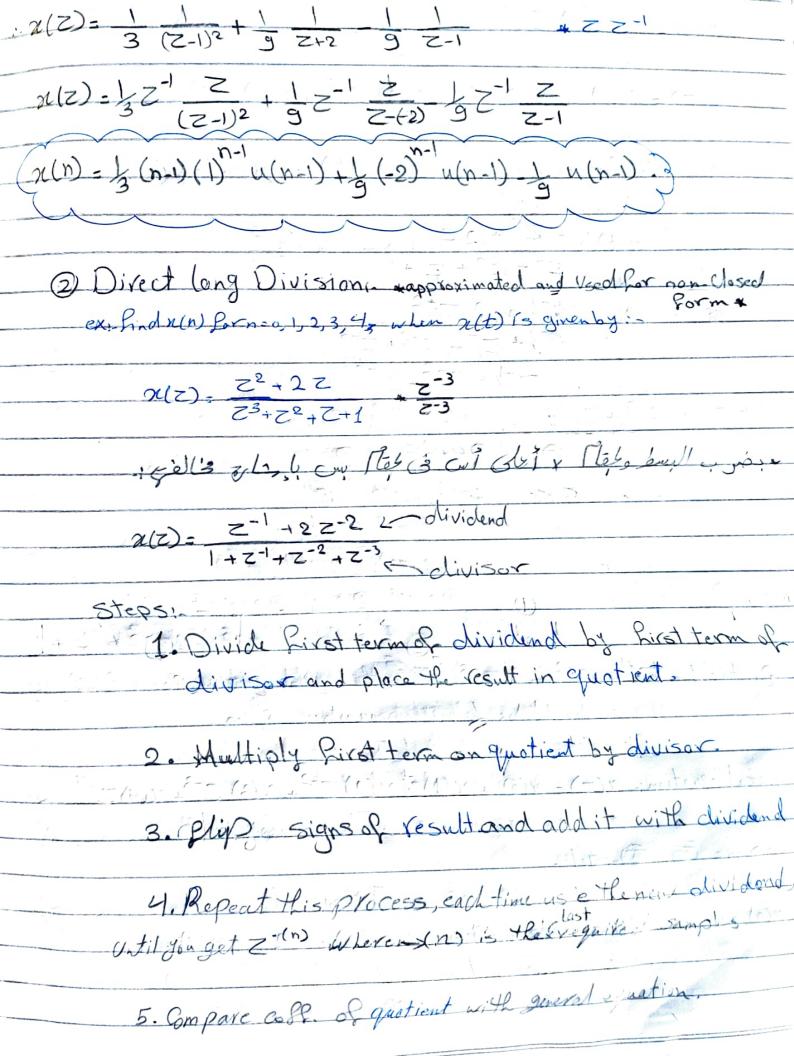
$$\chi(z) = \frac{10Z+5}{(Z-1)(Z+2)} = \frac{A}{(Z-1)} \frac{B}{(Z+2)}$$

$$\pi(z) = 5z^{-1} \frac{z}{z-1} + 5z^{-1} \frac{z}{z-(-2)}$$

$$\pi(n) = 5 u(n-1) + 5(-2)$$

ex. Find the inverse z transferm Per rile) = (Z-U2(Z+2)

$$x(z) = A B C$$



$$x(z) = \sum_{n=0}^{\infty} x(n) Z^{-n}$$

$$\chi(z) = \chi(0) + \chi(1) z^{-1} + \chi(2) z^{-2} + \chi(3) z^{-3} + z^{-3}$$

ex: Find x(n) for n=0, 1, 2, 3, 4when n(t) is given by

$$\pi(t) = \frac{Z^{2} + 2Z}{Z^{3} + Z^{2} + Z + 1} + \frac{Z^{-3}}{Z^{-3}}$$

2 2-3 The largest regative power of "Z" should be & making number

Compare (), 1 : get :-

$$\chi(2) = 0$$
, $\chi(1) = 1$, $\chi(2) = 1$, $\chi(3) = 2$, $\chi(4) = 0$