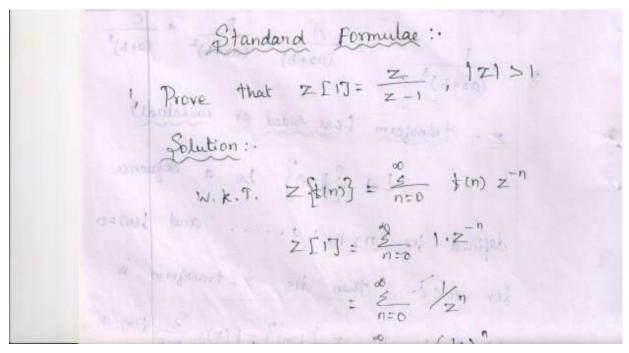




TOPIC 2: Problems based on Z transforms



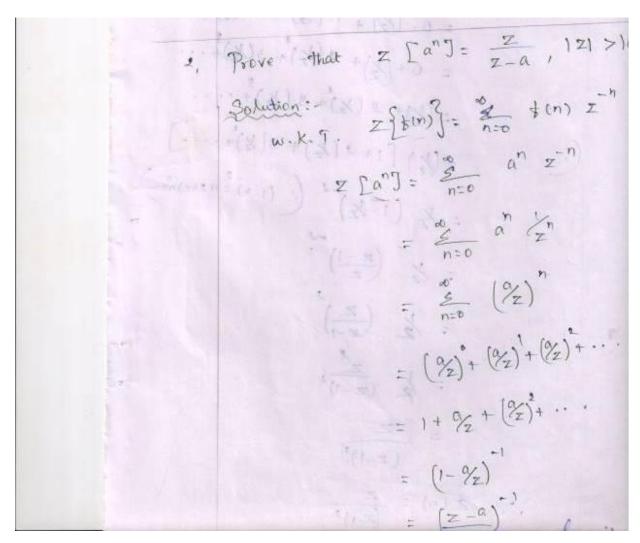
$$= (\frac{1}{z})^{2} + (\frac{1}{z})^{2} + \cdots$$

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

$$= (\frac{1}{z})^{2} + \cdots$$











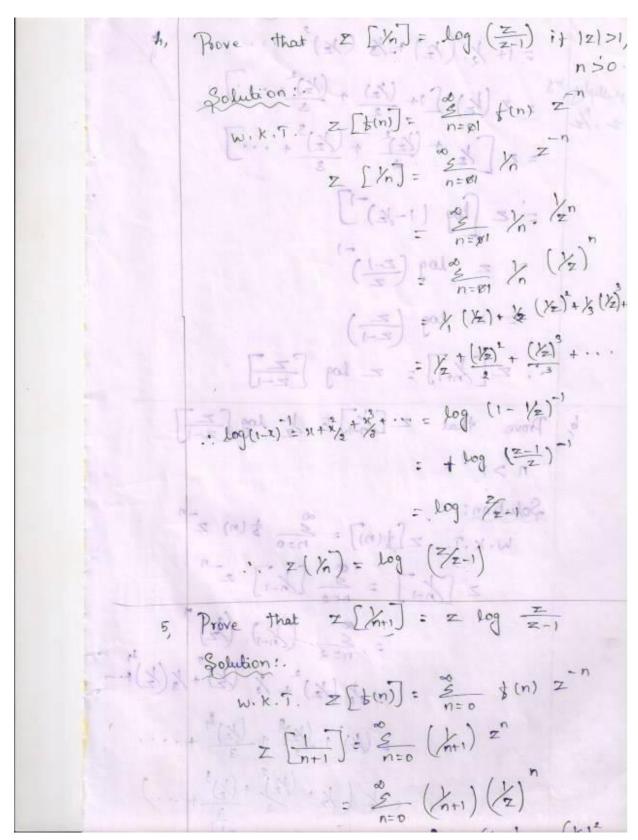
3 prove that
$$z(n) = \frac{z}{(z-1)^2}$$
 $|z| > 1$

Solution:

 $z(n) = \frac{z}{n-2}$ $|z| > 1$
 $z(n) = \frac{z}{(z-1)^2}$
 $z(n) = \frac{z}{(z-1)^2}$
 $z(n) = \frac{z}{(z-1)^2}$

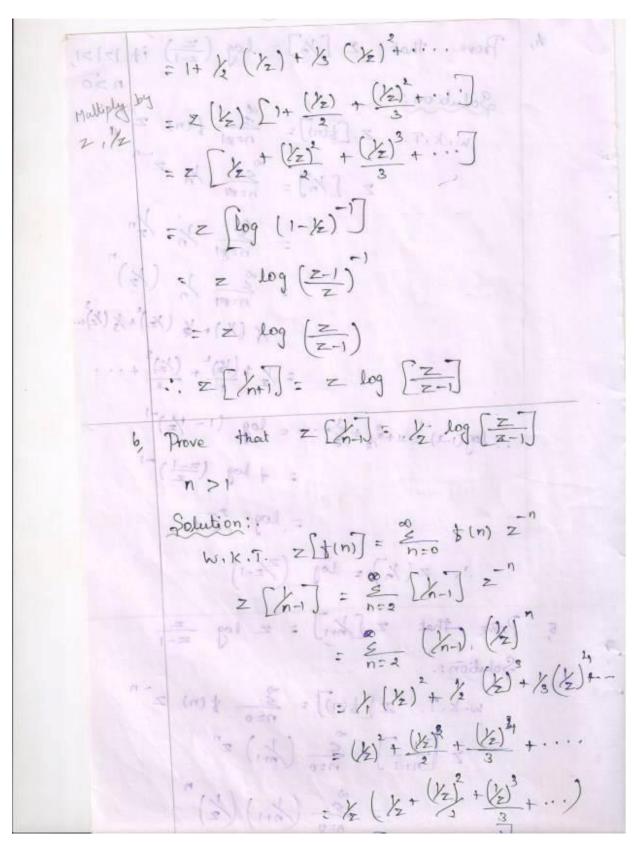






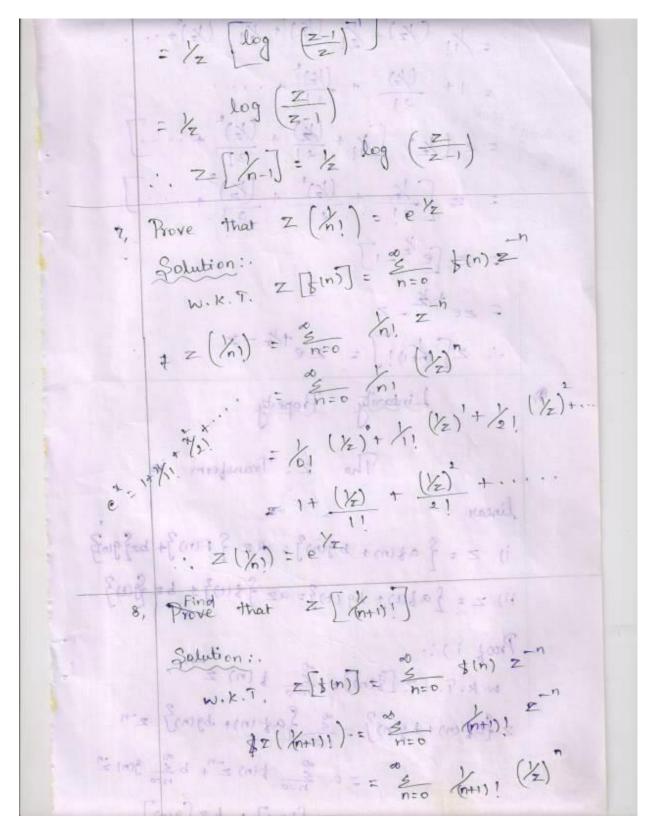






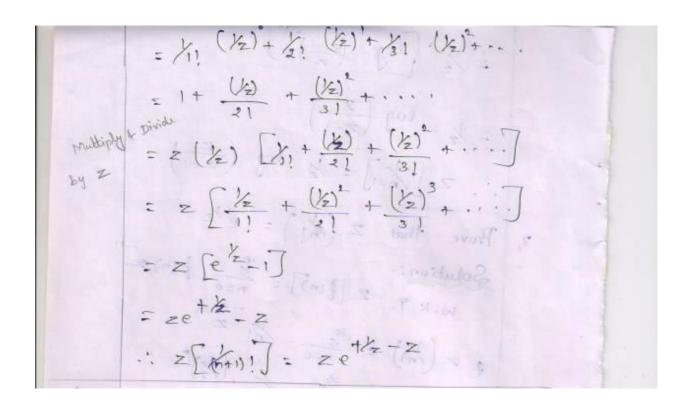


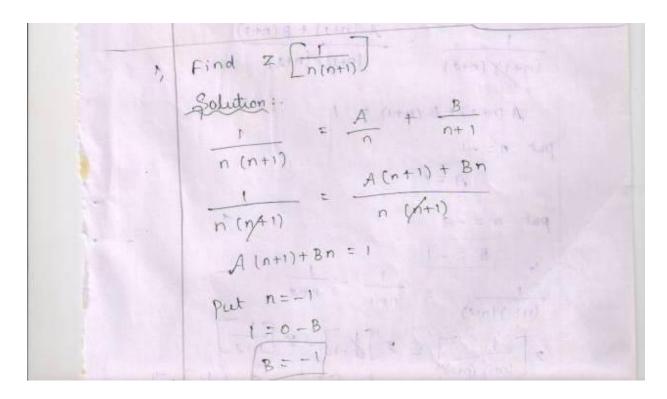














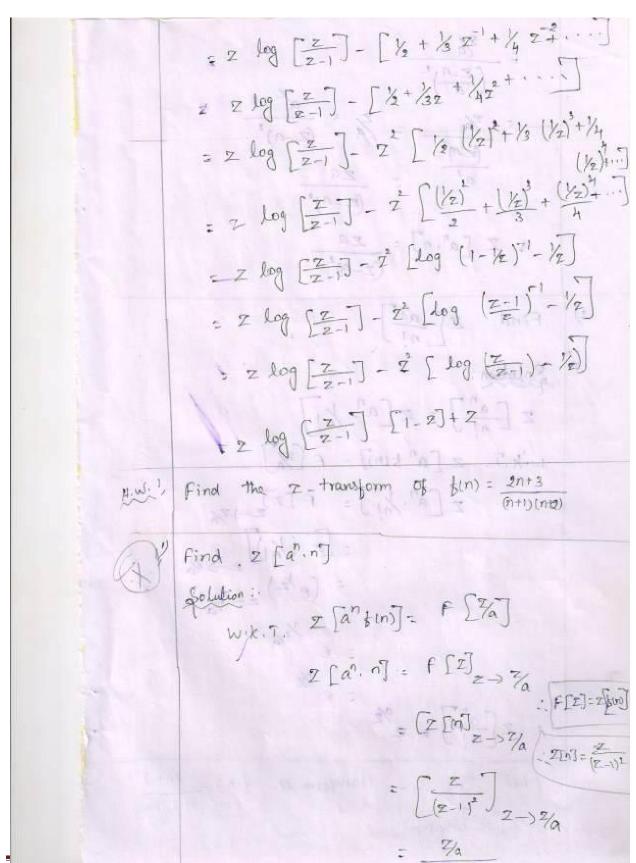






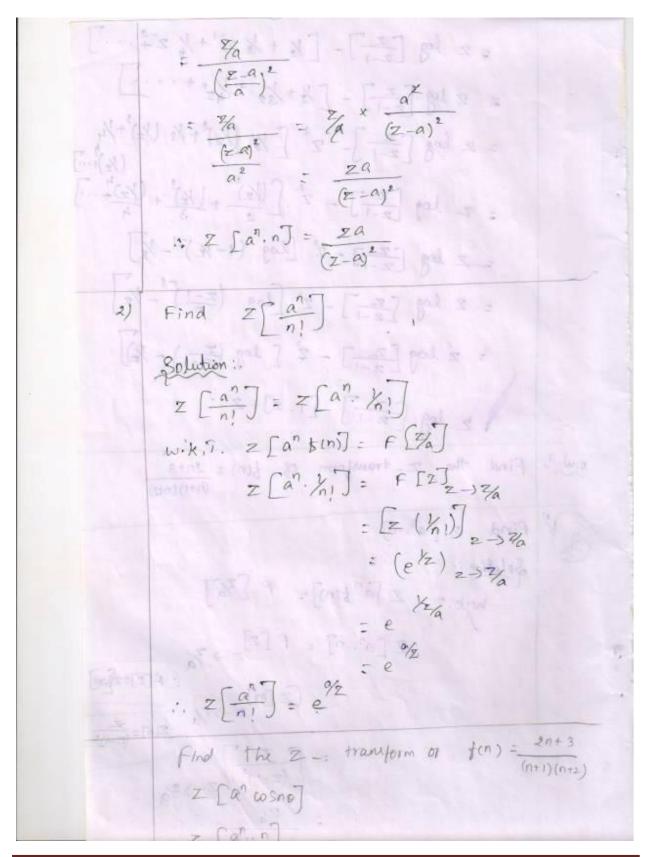
















1,
$$Z = \frac{3n+3}{(n+1)(n+2)}$$

Solution:

 $\frac{2n+3}{(n+1)(n+2)} = \frac{A}{(n+1)} + \frac{B}{(n+1)}$
 $\frac{2n+3}{(n+1)(n+2)} = \frac{A(n+2)+B(n+1)}{(n+1)(n+2)}$

But $n \le 2$
 $2(-3)+3 = B(-2+1)$
 $-1 = -B$
 $2(-3)+3 = B(-2+1)$
 $-1 = -B$
 $2(-3)+3 = A(-1+2)$
 $2(-3)+3 = A(-1+$





	= (2/4 - coso) (2/2 (100)) 3 (1) (2/4) 2 (100) 3 (1) (2/4) 2 (100) 3 (1) (2/4) 2 (100) 3 (1) (2/4) 2 (100) 3 (1) (2/4) 2 (100) 3 (1) (2/4) 2 (100) 3 (
i)	Find Z [n] 1+n = E+rek (there)
	Solution: (1 +11) 2 + (2 +11) A w. K. T. Z [n + (n)] = - 2 gz [f(z)]
	z [n.n] = -2 de [zinj]
	(1+2-) A d + (= 1)2
	$\frac{d_{2}(\%)}{d_{2}(\%)} = \frac{\text{Vdu} - \text{udv}}{\text{V}^{2}} = -z \left[(z-1)^{2} (1) - z \cdot 2(z-1) \right]$
	$z - 2 \left[(z_1) + (z_1) + (z_1 - 1 - 2z) \right]$
	z + z = z = z = z = z = z = z = z = z =
	(z-n32) 1-10
	$\begin{bmatrix} z & z & z \\ z & z & z \\ z & z & z \end{bmatrix}$
	0.000 0 - 0
	(z-1)3 (m) 10] =
	$\therefore \sum \left[n^2 \right] = \frac{z^2 + z}{(z-1)^3}$
	1200==] = =





? Find the 2-transform of (n+1) (n+2)
2, Find
Solution 1.4 Facourse - 3
Solution. $Z \left[(n+1) (n+2) \right] = Z \left[n^2 + 2n + n + 2 \right]$ $Z \left[(n+1) (n+2) \right] = Z \left[n^2 + 2n + n + 2 \right]$
$Z \left[(n+1) \left(n+2 \right) \right]$
- (n to)
027+3221
$\frac{1}{(z)} = \frac{1}{(z-1)^3} + \frac{1}{3} = \frac{1}{(z-1)^3} + \frac{1}{2} = \frac{1}{(z-1)^3}$ (1) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2
Z (2+1) + 3 (2-1)
(z-1) ³
7 (2+1) + 3 × (x-1) + 2 × (x-1)
$\frac{(z-1)^{2}}{z} = \frac{(z-1)^{2}}{(z-1)^{3}} = \frac{(z-1)^{2}}{(z-1)^{3}}$ $= \frac{(z-1)^{3}}{(z-1)^{3}} = \frac{(z-1)^{2}}{(z-1)^{3}} = \frac{(z-1)^{2}}{(z-1)^{3}$
$\frac{1}{2} = \frac{1}{2} + 3 = \frac{1}{2} + 3 = \frac{1}{2} + 2 = \frac{1}{2} = $
00 to X+ X + 3, X - 3, X
F. S. 2/2-82+27-42+2/2
$= \frac{z + 4 \cdot 20}{(z-1)^3}$ $= \frac{z \cdot 2^3}{(z-1)^3}$ $= \frac{z \cdot 2^3}{(z-1)^3}$ $= \frac{z \cdot 2^3}{(z-1)^3}$
Re Final value Misserry
$\frac{1}{2}$
$(3)\frac{1}{2} = (3)(2-1)^{3} = 3$
(z-1)
If $F(z) = \sum_{z=1}^{\infty} \sum_{z=1}^{\infty} \frac{1}{2z\cos a_1}$ find $f(0)$ If $f(z) = \sum_{z=1}^{\infty} \frac{1}{2z\cos a_1} + 1$ find $f(0)$
(D(1900-2) = + (10) (19200 - 1) + (10) mil = 1
& find lim t (t)
Q. Lition :
TARAS = 1 S
By Initial value theorem, By Initial value theorem, Lim F(I) SNSCE/S&H/HNIT 5/7 transforms/52 - Problems based on a transforms (D.S.H.II.A/AP/MATHS) Page 14/
7023/-1-
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