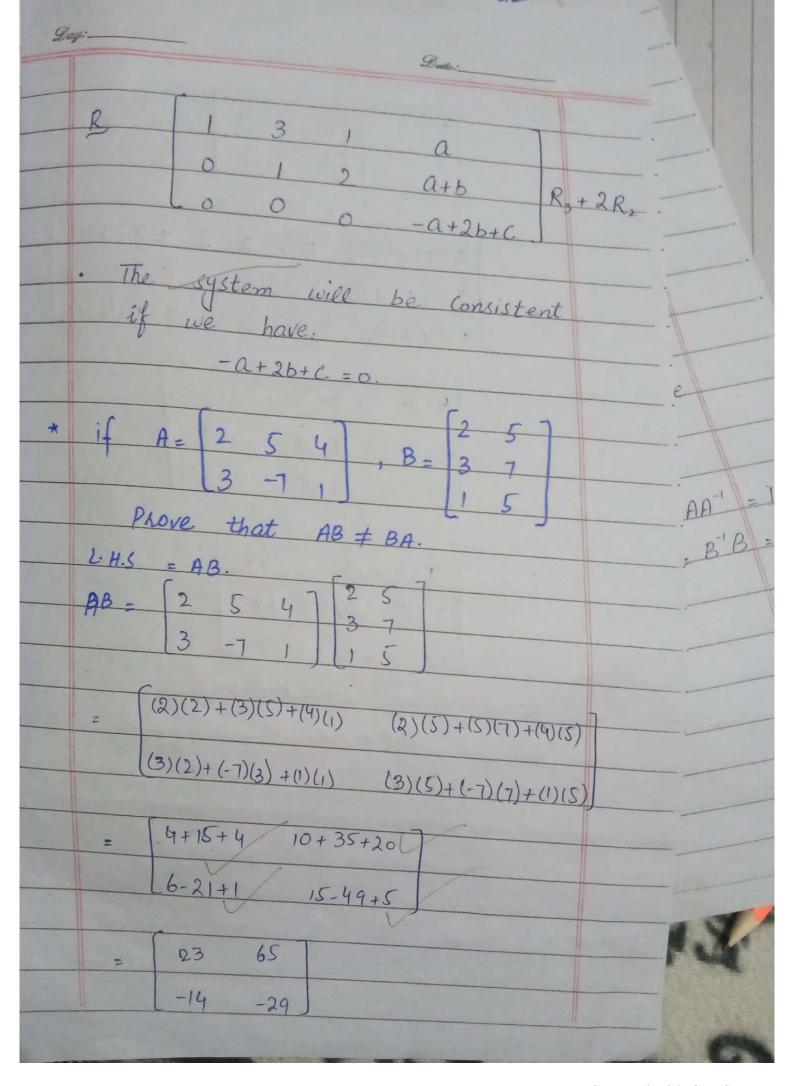
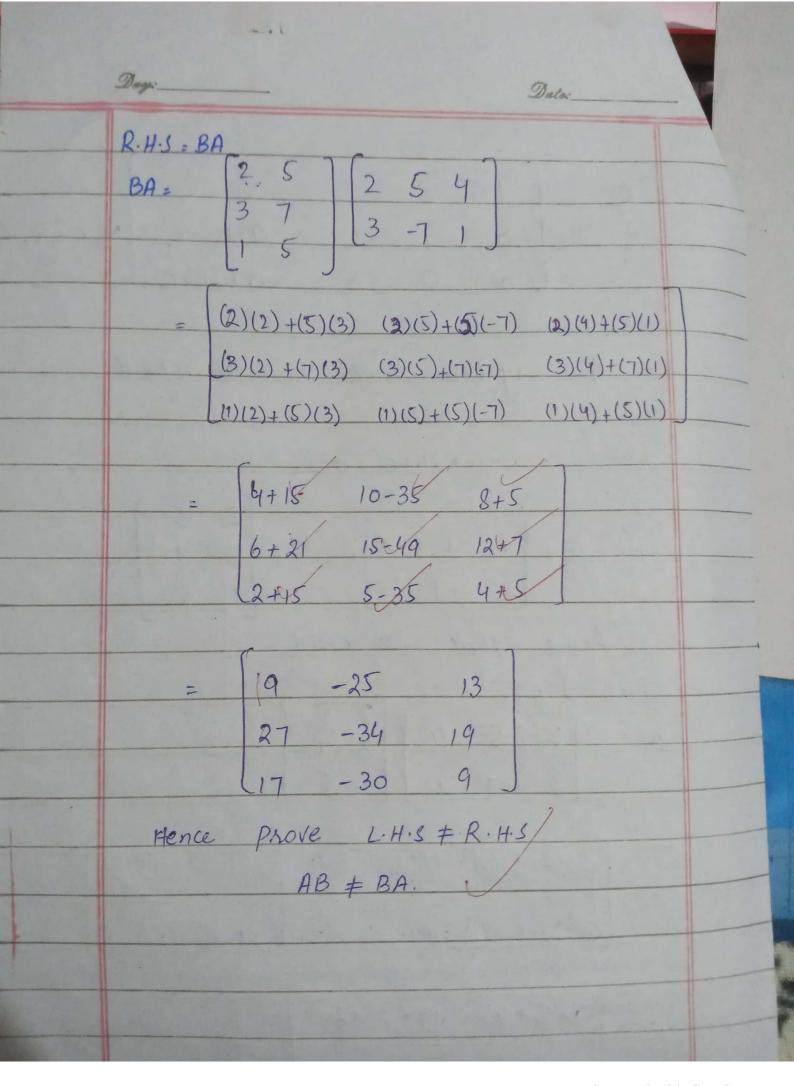
Assignment: Linear algel Roll no: 2043.	
Linear algor	1 - 1
The state of the s	bra. 7
Roll no: 2043.	(70)
926: Détermine values of a	for which the
The Mo-Solutions, exc	actly one
solution, or infinitely n	nany solutions.
x+2y+z = 2	V
2x-2y+3z=1	
$x + 2y - (a^2 - 3)z = a$	
Augmented matrix	is given by
[2]	1 2 7
2 -2 3	
2 -(0-3)	α
converting in sow echelo	on form
B 1 2 1/1 2	
[0 -6 1 -3	R,-2R,
$\begin{cases} 0 & -6 & 1 & 1 & -3 \\ 0 & 0 & -a^2 + 2 & 1 & a - 1 \end{cases}$	2 JR3-R.
R 1211	2
R 1 2 1 1 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6	1/2 1 x R2
i- The system will have solution if $-a^2+2 \neq 0$	e unique
Solution if $-a^2+2 \neq 0$	

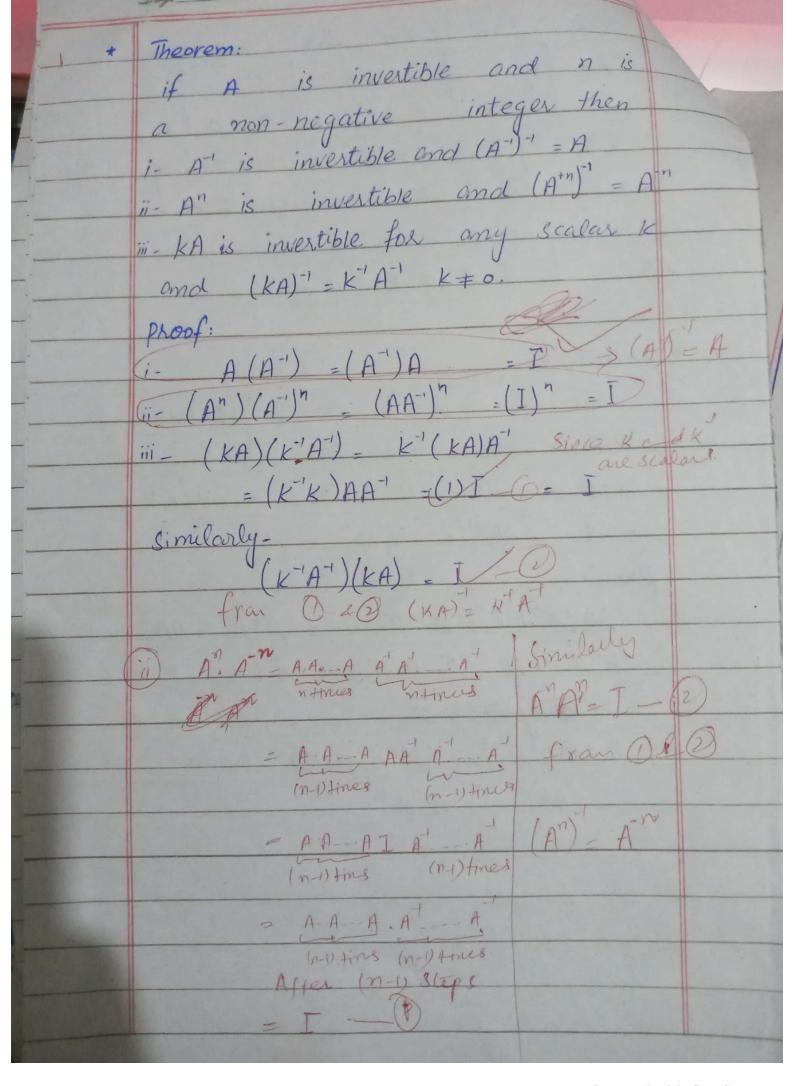
Pau	States		
Pay	Day		
	=> 0 / 2 , 0 / + 12		
11-	The system will have infinitely	R	
	many solutions if -a+2=0 and		
	many solutions if -0'+2=0 and and all and satisfied		
111	The system will have have solution		117.09
	11 -at 2 = 0 and a - 4 + 0.		The
	00 de +52 ad a + -2		if
Q28:	In what condition, a spen raises attify		
67.0.	for linear system to be consistent.		
		*	if
	x + 3y + z = a		1
	-x-2y+z=b		P.
	3x + 7y - Z = C		L. H.S
	Augmented matrix is given by:		CHO
			AB =
	1 3 1 0		
	1 -2 1 1 6		
1000			2
	[3 7 -] [6]		
P. Company	converting in now echelon form-		
Re lead			=
	0 6 1 2 1 1 6 7'		
	B R2+Ri		
	$\begin{cases} 0 & 1 & 2 & 3 & 2 & 2$	-	
	1 0 -2 -4 C-3a R3 - 3R.	-	+-
		-	
CONTRACTOR OF THE PARTY OF THE		1	



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94	
* Chau	
* Show that $A \neq 0$, $B \neq 0$ but $AB = 0$.	
$A = \begin{bmatrix} 0 & 1 \\ 0 & 2 \end{bmatrix}, B = \begin{bmatrix} 3 & 7 \\ 3 & 7 \end{bmatrix}$	
[0 0]	
AB = (0)(3) + (1)(0) (0)(7) + (1)(4)	
AB = (0)(3) + (1)(0) (0)(7) + (1)(6) $(0)(3) + (2)(0) (0)(7) + (2)(0)$	
$\int O \qquad O \qquad 1$	
AB = 0	
* The second sec	
* Theorem:	
If A and B are invertible	
with same size then the	
Product AB is also inversible	
and $(AB)^{-1} = B^{-1}A^{-1}$	
Proof:	
$(AB)(B^{-1}A^{-1}) = A(BB^{-1})A^{-1} = AIA^{-1} = AA^{-1}$	- 7
(B'A')(AB) = B'(A'A)B = B'IB = B'B	= / =
using O & D	
$(AB)(B^{-1}A^{-1}) = (B^{-1}A^{-1})(AB) = 1$	
$(AB)^{-1} = B^{-1}A^{-1}$	



Je P	Dota:	
	Theorem:	
	if A is invertible, AT is	T
	malie invertible and	
	Proof: $ (A^{\tau})^{-1} = (A^{-1})^{T} $	
	we want > AT (A-1)T = (A-1)TAT = I	
	NOW AT (A-1) = (A-A) = ITE I	0
	$(A^{-1})^{T}A^{T} = (AA^{-1})^{T} = T$	I
	- (ran Of 2)	
	$(AT)^{-1}(A^{-1})T$	-
		*
		,
1		
-		

