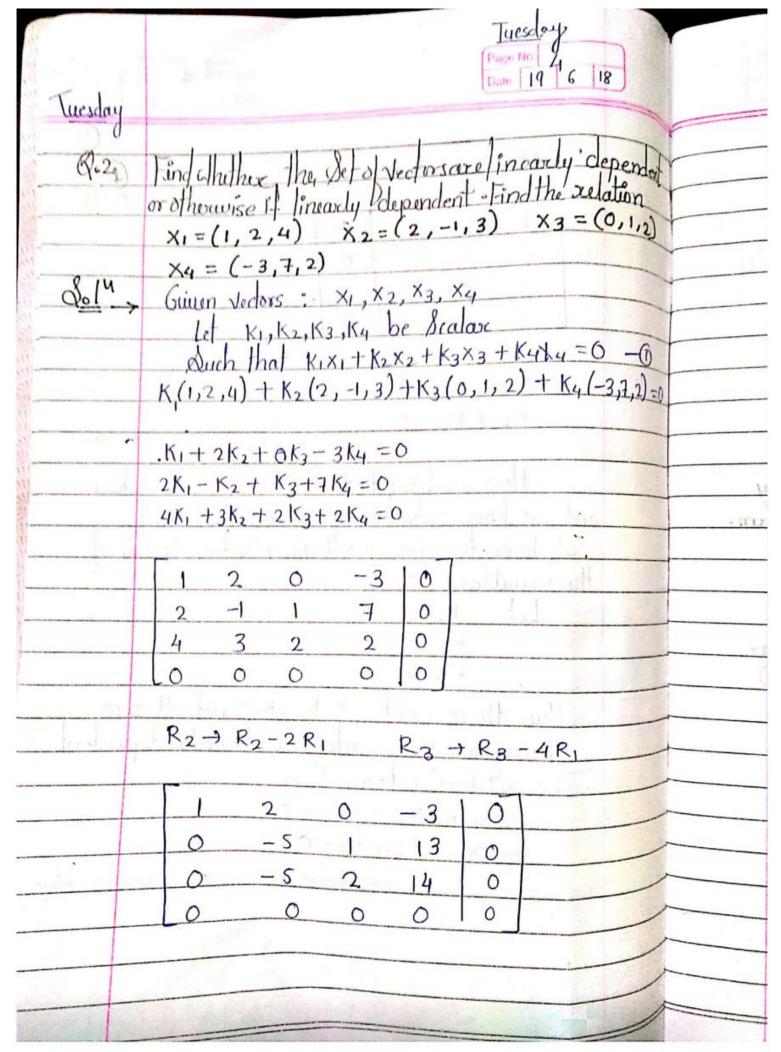
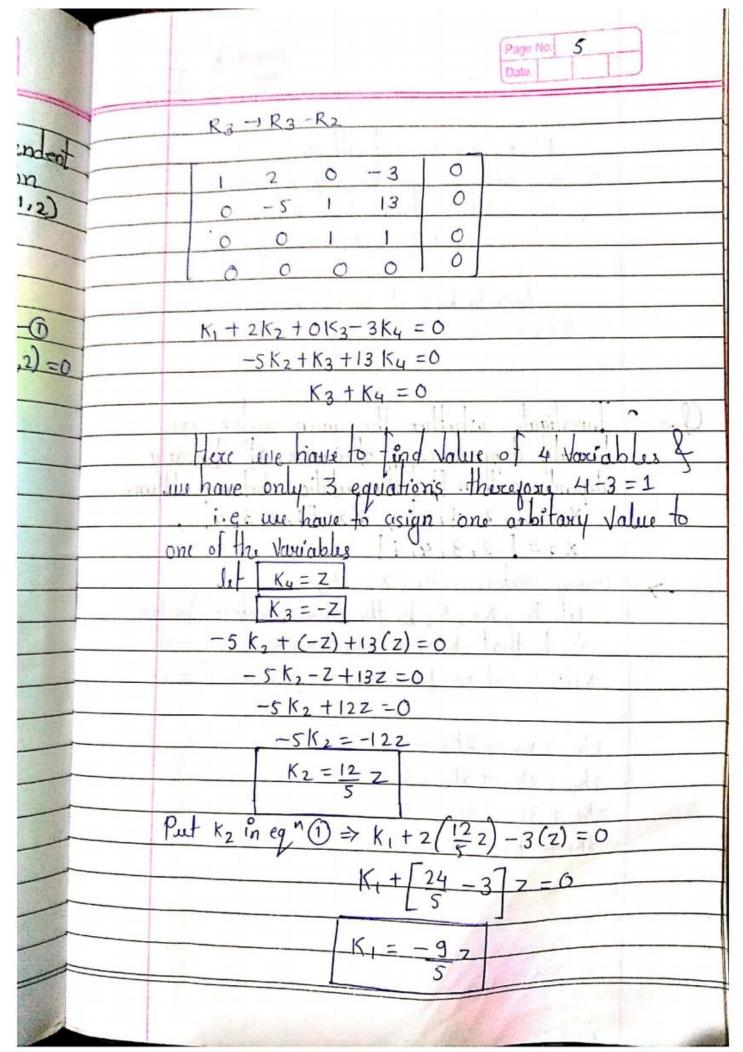
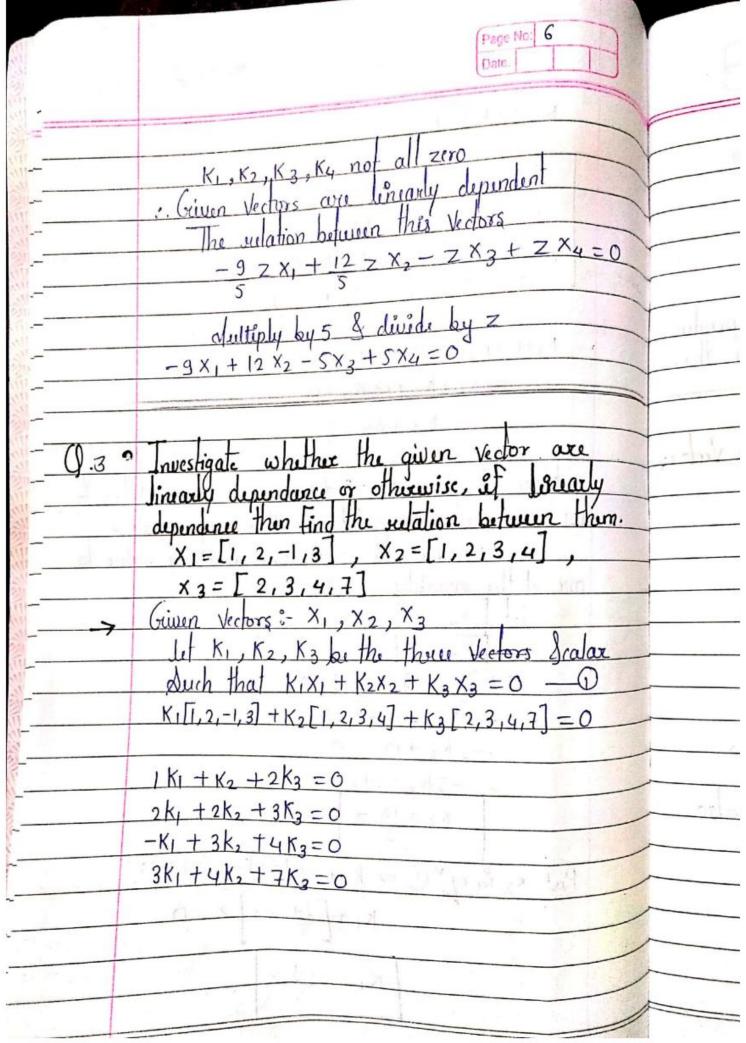
			18	<u>3 m.</u>
				No. 1.
Monday	Unit VI - C	atrices	Date	19 6 18
Linear	z dipindence	<u>-</u> -	9 .	1 1 1
	The Set of	Victor X,	, 1/2 , >	is said to be
lineax	ly dipinden 4	if there	exists Sca	In is said to be
7101	all Zelo.			
	Such that	K1X1 + K2X2	+ K3×3+	KnXn=0
_	calhere 0	is null	vector.	\$
1.	1 K1 , K2	1 Kn =	= o then ve	cors are called
Jinta	ally independe	nt ·	Я	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
wint 6M		-		
(d) 1 []	1 11 11	9		, , , , , , ,
OX OF	whether in	of of v	ectors axe	inearly dependent ind the xelation
hetu	gen them.	uniarly ,	dependent.	and the relation
OCIU	acii Mein.			$X_3 = [2,3,4,7]$
dolution :- Gi	un Vectore	X1 X2 .	1-L1,2,5,4	$X_3 = [2,3,4,7]$
	Let KINKS	Ka ha the	rea le l	self and
du	duch that K1X1 + K2X2 + K3X3 = 0 - 0			. 0
Kı	[1,1,1,3] +	- K ₂ Γ1, 2,	$\frac{1}{3}, \frac{1}{4}, \frac{1}{4}, \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$	[2,3,4,7]=0
Kı	+ K2 + 2 K3	= 0	377 713	[2,3,4,'+] =0
$K_1 + 2K_2 + 3K_3 = 0$				
$K_1 + 3K_2 + 4K_3 = 0$				
3 K	1+4K2+7	K2=0		24 0 0
			u	1 327
	1 1	2 1 0		1.15
	1 2	3 0		
	1 3	4 0	area of	10
	3 4	7 0	MA	ADA TOTAL
			1/2/2	
			N. A. S. C.	

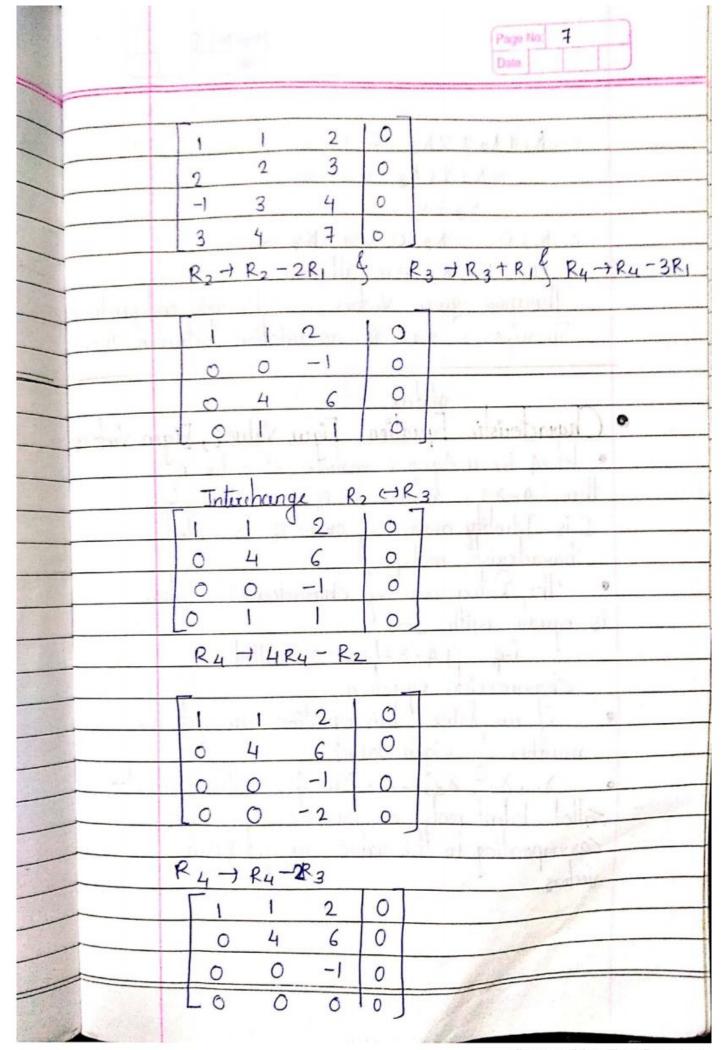
	181	Page No: 2
	$R_2 \rightarrow R_2 - R_1$	-: whendir about
	1 1 2	0
AU AU	0 1 1	0
	1 3 4	0
2	3 4 6 7	0
a lash	1.0.9 18 3	4 1 1 1 1
¥	$R_3 \rightarrow R_3 - R_1$	the holy of the
(f) (*)		
	1 1 2	0 100 4 1016
11 - 11-11	1	de tiad cheller the 0.
ireign.		Donal is solumned to
F. P.C.	3 4 7	between mem.
		X [E,1,1,1]=1X
	$R_3 \rightarrow R_3 - 2R_2$	Johnson - Stronger Medicine - Market
77	1 1 2	
(T)	0 1 1	0
	0 0 0	0 4 - 13 1 1 1 1 9
	3 4 7	0
-		. 0
	R4→ R4-3R1	7 - 7 A P F (2) + 4 1/2
<u> </u>		William F. A. F. B.
	1 1 2	10
	0 1 1	
	0 0 0	A CONTRACTOR OF THE PARTY OF TH
	0 1 1	0
100		

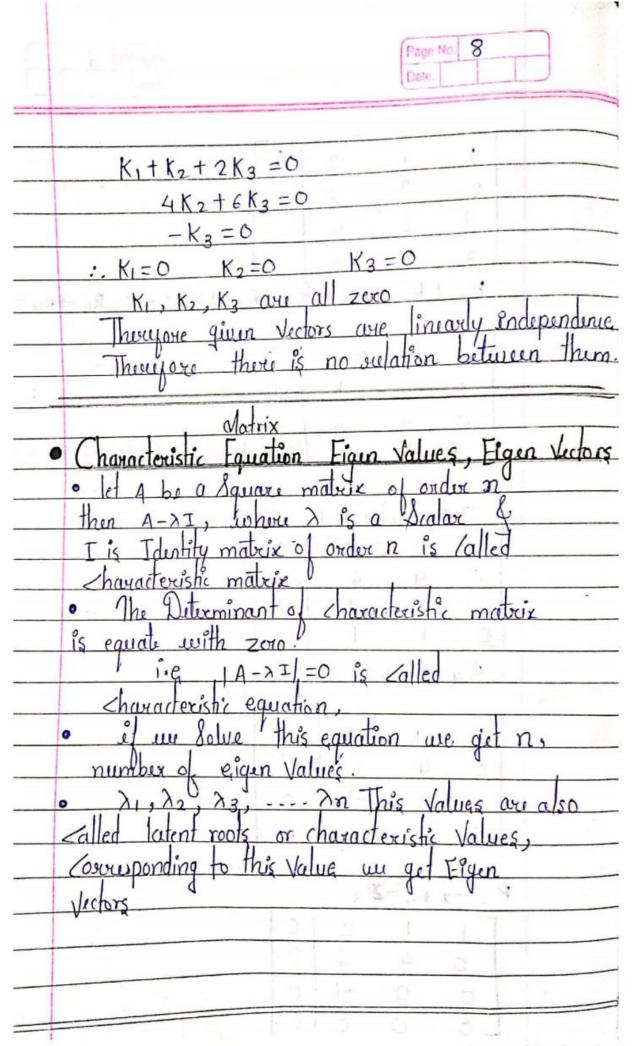
	Page No. 3 Date.
	$R_4 \rightarrow R_4 - R_2$
	The state of the s
	N (8 1-,2) = 0 (12, 5, 1) = 1%
	0 -1 1 0 (s,1,8-) = px
	0 0 0 0
	0 0 0 0 0
	Winds Heat Kexi tkixellera Ro
	$K_1 + K_2 + 2K_3 = 0$
	$K_2 + K_3 = 0$
	0 = 12 - 12 - 15 - 10 - 1
	Here we have to find Values of 3 Variables
	and use house only two ear therefore 3-2=1
	ale have to asign I axbitary Value to one of
	the Vaxiables.
	$\begin{cases} k_2 = Z & k_1 + Z + \lambda Z = 0 \end{cases}$
	$K_3 = -Z$
	K1=Z.
	Thus there exists Ki, K2, K3, not all zero.
	Therefore given vectors are invary dependent
	The xelation between them
	$ZX_1 + ZX_2 - ZX_3 = 0$
1000	$\Rightarrow x_1 + x_2 - x_3 = 0$
	7 11 2 113 -0

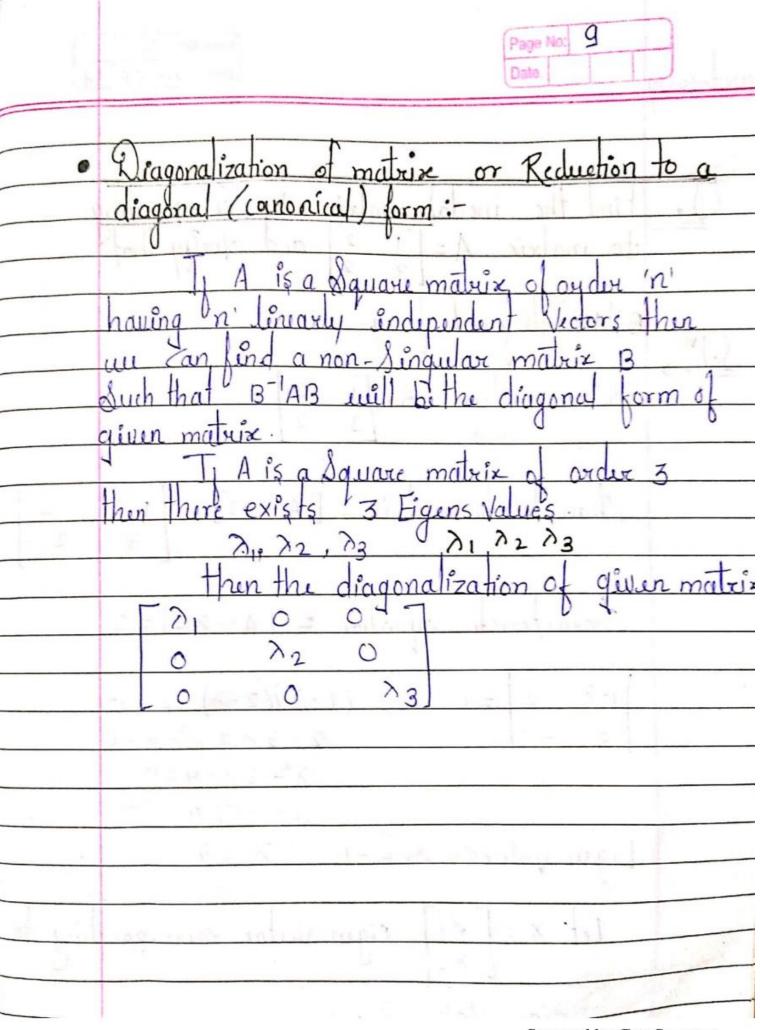


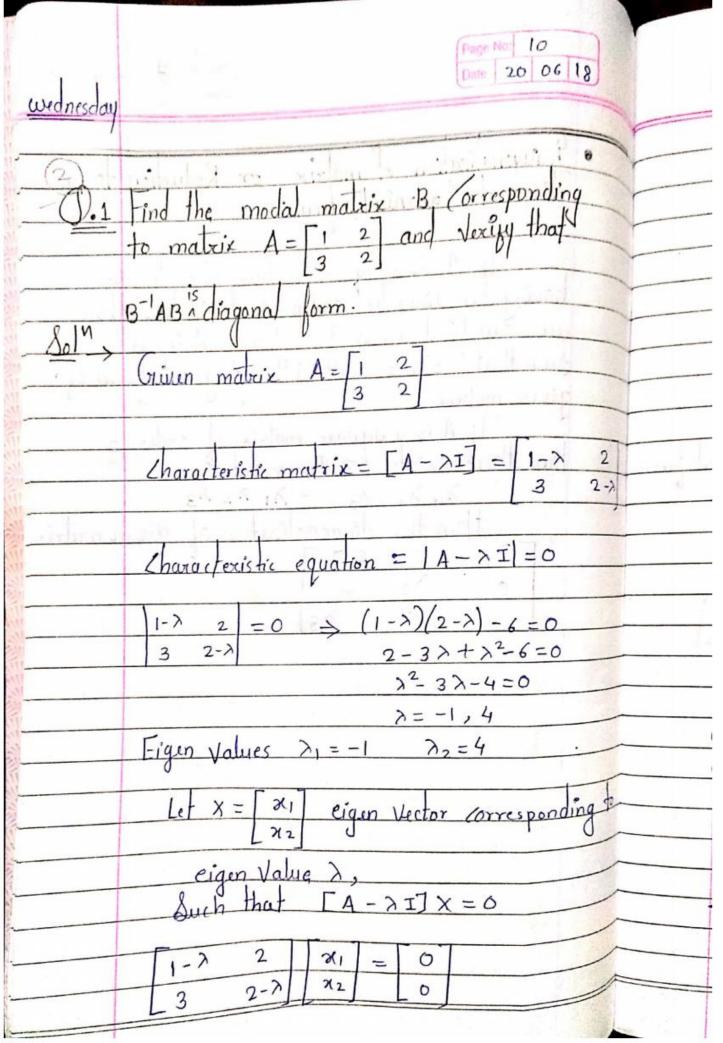




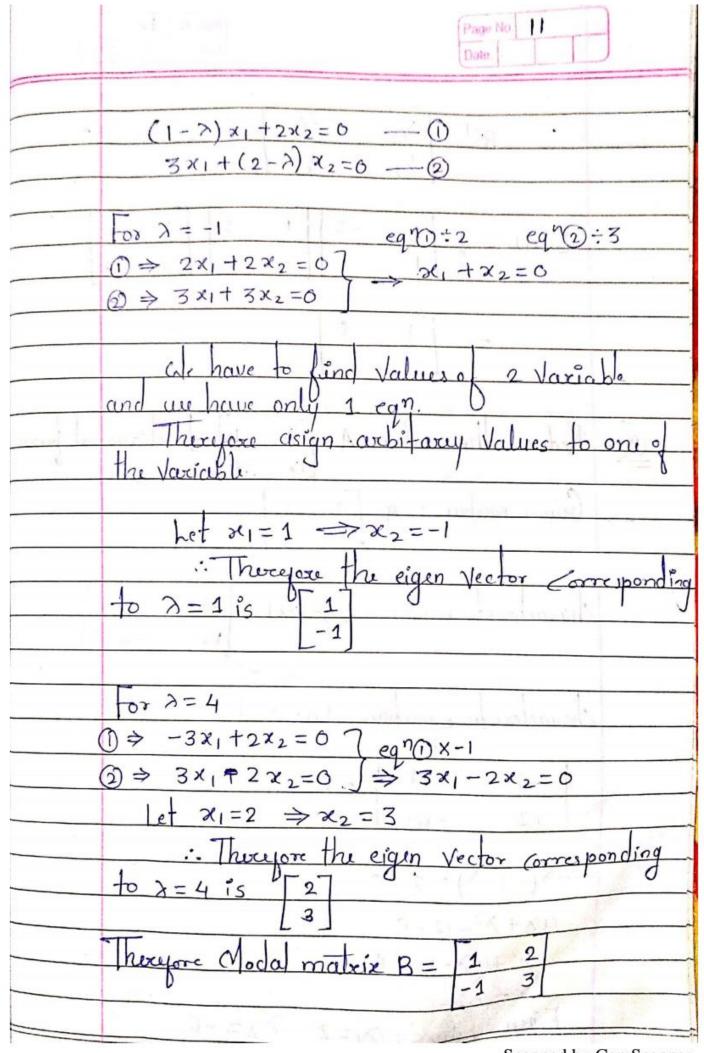


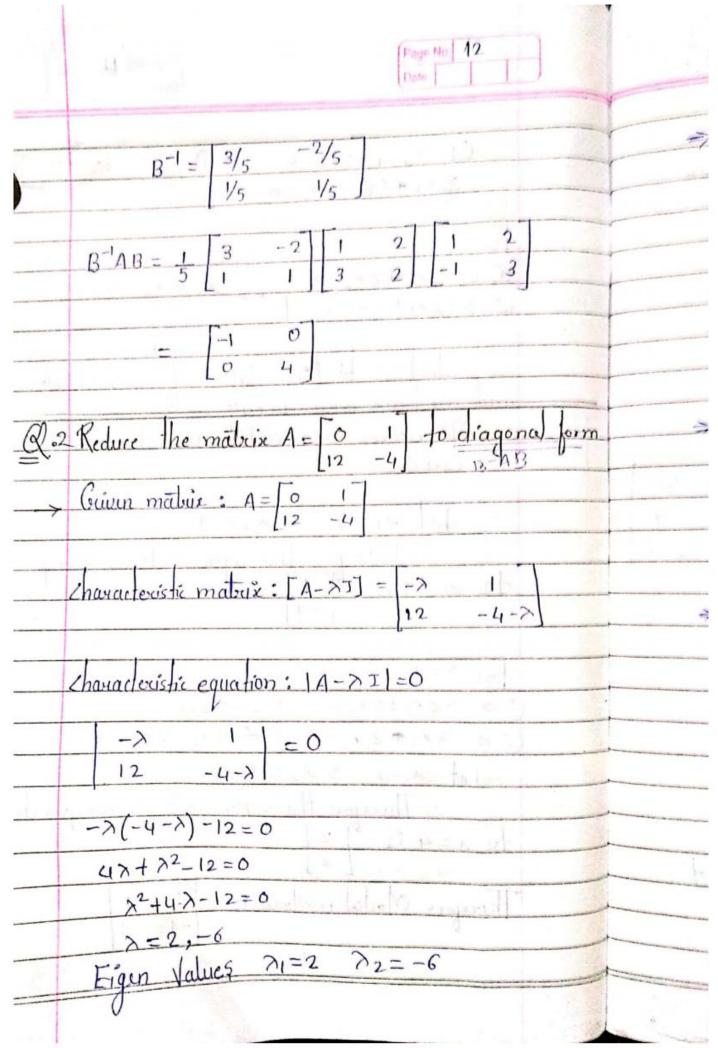




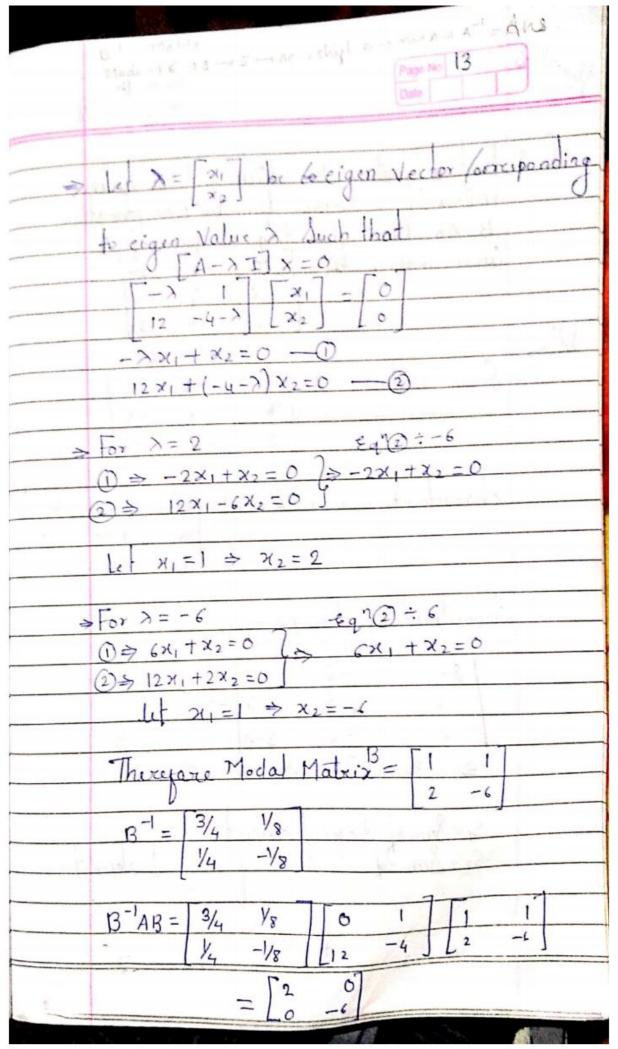


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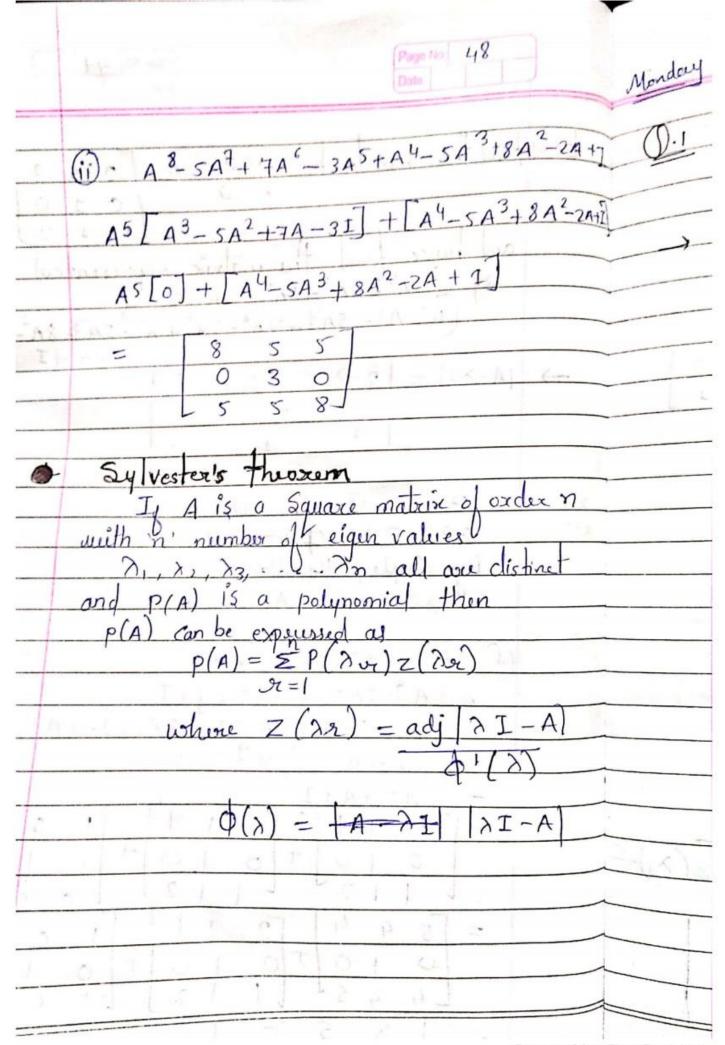


Hursdoy	Face 10 14 12 06 18	Page Ray IS Onto
Q.3	ting a matrix B which reduces given matrix to a diagonal form by transformation	$\lambda^{3} - (8+7+3) \lambda^{2} + \begin{bmatrix} 7 & -4 & 1 & 8 & 2 & 1 & 8 & -6 \\ -4 & 3 & 1 & 2 & 3 & 1 & -6 & 7 \end{bmatrix}$
	(uiven mature A = \begin{array}{c} 8 & -6 & 20 \\ -6 & 7 & -4 \\ \end{array}	$\lambda^{3} - 18\lambda^{2} + (5 + 20 + 20)\lambda = 0$ $\lambda^{3} - 18\lambda^{2} + 45\lambda = 0$
Jol >	Given matrix A = 8 -6 2	$\frac{3}{3} = 0, 3, 15$ $\frac{1}{3} = \frac{3}{3} = 3$
AD AD	2 -4 3 [2 -4 3] [2 -4 3]	Let $\lambda = x $ be eigen Vectors (orresponding $ x_2 $ $ x_3 $ $ x_3 $
The state of the s	2 -4 3-X	Such that $[A - \lambda I] \times = 0$
iii iii	2 2 2 2 2 2 2 2 2 2	$ \begin{vmatrix} 8 - \lambda & -6 & 2 & x_1 \\ -6 & 7 - \lambda & -4 & x_2 & = 0 \\ 2 & -4 & 3 - \lambda & x_3 \end{vmatrix} $
	$\begin{vmatrix} -6 & 7-\lambda & -4 & = 0 \\ 2 & -4 & 3-\lambda \end{vmatrix}$ $\Rightarrow \lambda^3 - S_1 \lambda^2 + S_2 \lambda - A = 0$	$(8-3)x_1-6x_2+2x_3=0 - (1)$ $-6x_1+(7-3)x_2-4x_3=0 - (2)$
	S1 = Sum of diagonal element S2 = Sum of minors of diagonal element	$2x_{1}-4x_{2}+(3-\lambda)x_{3}=0 - 3$ For $\lambda = 0$ $0 \Rightarrow 8x_{1}-6x_{2}+2x_{3}=0$
	5+ (-10)+10	(3) > -6x1+7x2-4x3=0 (3) > 2x1-4x2+3x3=0 By (ramors Cule,

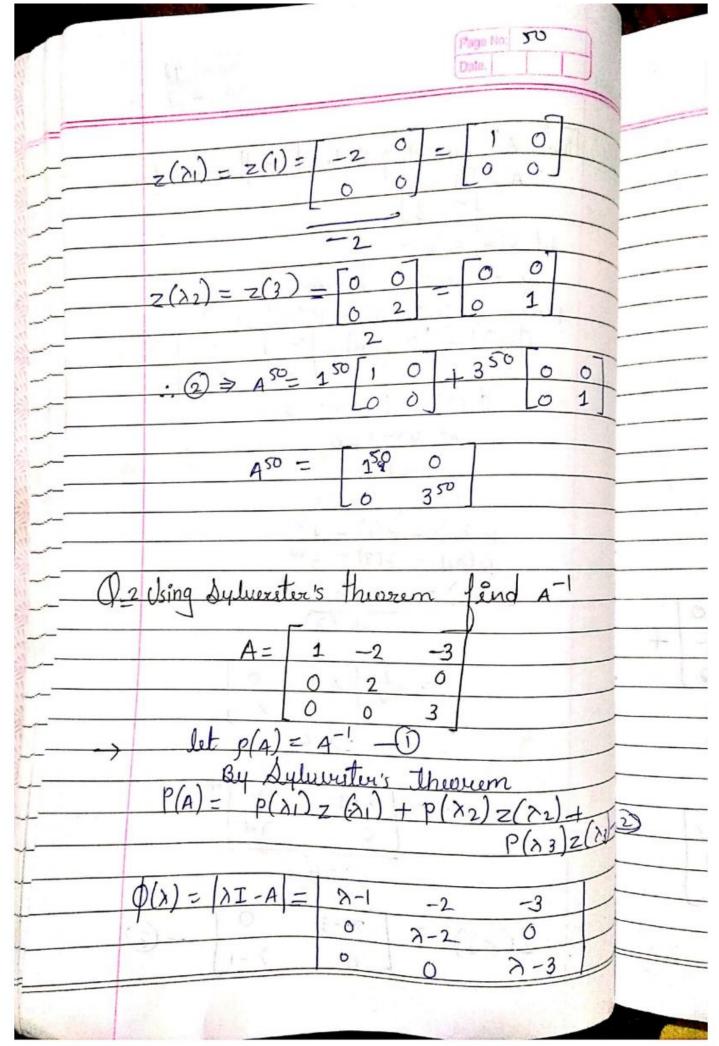
Face for JC	Page fac. 17
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{cases} $
$x_1 = -x_2 = x_3$ $10 = -20 = 20$ 20 $x_1 = 1, x_2 = 2, x_3 = 2$ $x_1 = 1, x_2 = 2, x_3 = 2$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\frac{\sqrt{8} + 3}{\sqrt{8} + 8} = 5x_1 - (x_2 + 2x_3 = 0)$ $-6x_1 + 4x_2 - 4x_3 = 0$: x ₁ =2 , y ₂ =-2 , y ₃ =1
$2x_1 - 4x_2 + 0x_3 = 0$ $x_1 = -x_2 = x_3$	$\gamma_3 = \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix}$
-6 2 5 2 5 -6	Modal Matrix B = 1 2 2 2 2 1 -2 2 2 -2 1)
$\frac{\chi_{1} = -\chi_{2} = \chi_{3}}{16}$ Should by 8 $\chi_{1} = 2 \chi_{2} = 1 \chi_{3} = -2$	$B^{-1} - \begin{bmatrix} y_3 & 2/9 & 2/9 \\ 2/4 & y_9 & -\frac{1}{2} \\ 2/9 & -\frac{2}{9} & y_9 \end{bmatrix}$
$X_1 = 2$ $X_2 = \begin{bmatrix} 2 \\ 1 \\ -2 \end{bmatrix}$	

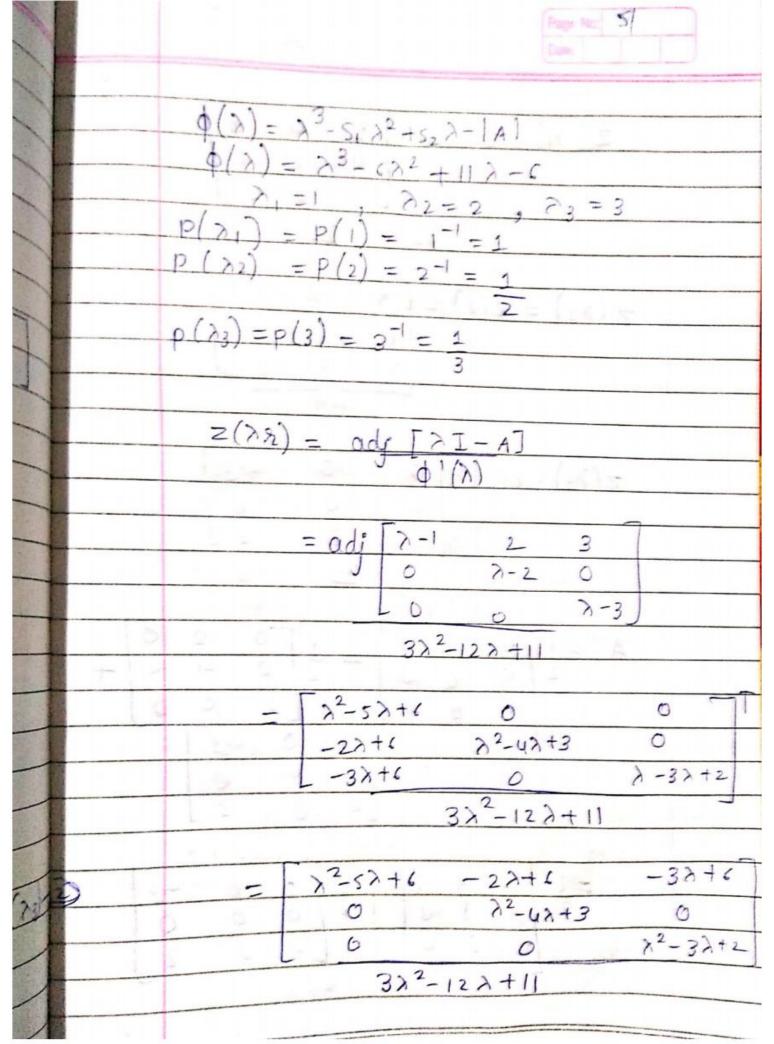
Page No. 19 Date	Page to Use
$B^{-1}AB = y_9 + y_9 +$	23-5,22+522-101=0
2/9 1/9 -43 -6 7 -4 2 1 -2	23+22+[-12-3-1]2-45=0
2/g -4/g /g 2-4 3 2-21	$\lambda^{3} + \lambda^{2} - 21\lambda - 45 = 0$
	7=5,-3,-3
= 0 0 0	eigen values $\gamma_1 = 5$ $\gamma_2 = -3$ $\gamma_3 = -3$
0 3 0	Let x = [xi]
0 0 15	72
	Lns
	[A->I] X=0
14 find the modal matrix A = -2 2 -3	[-2-> 2 -3 [NI 1 0
2 1 -6	$\begin{vmatrix} 2 & 1-\lambda & -6 & \lambda_1 & = 0 \\ -1 & -2 & -\lambda & \lambda_3 & 6 \end{vmatrix}$
	[-1 -2 -x][x3][c]
30/2 ainen matrix 4= -2 2 -37	(-2-2) x1+2x2-3x3=0-0
-1 -2 0	2x, +(1-2) x2-6x3=0-@
1, 1	$-x_1 - 2x_2 - 2x_3 = 0$ -3
Changituistin matrix [A->2] = [-2-> 2 -3]	
2 1-2 -6	For h=5
-1-'-2 0-3	() => -7×1+2×2-3×3=0
Characteristic equation A -> II =0	
	+ ×1×2 - ×2
-2-> 2 -3	
2 1-> -6	2 -3 -7 -3 -7 2
1 -2 ->	

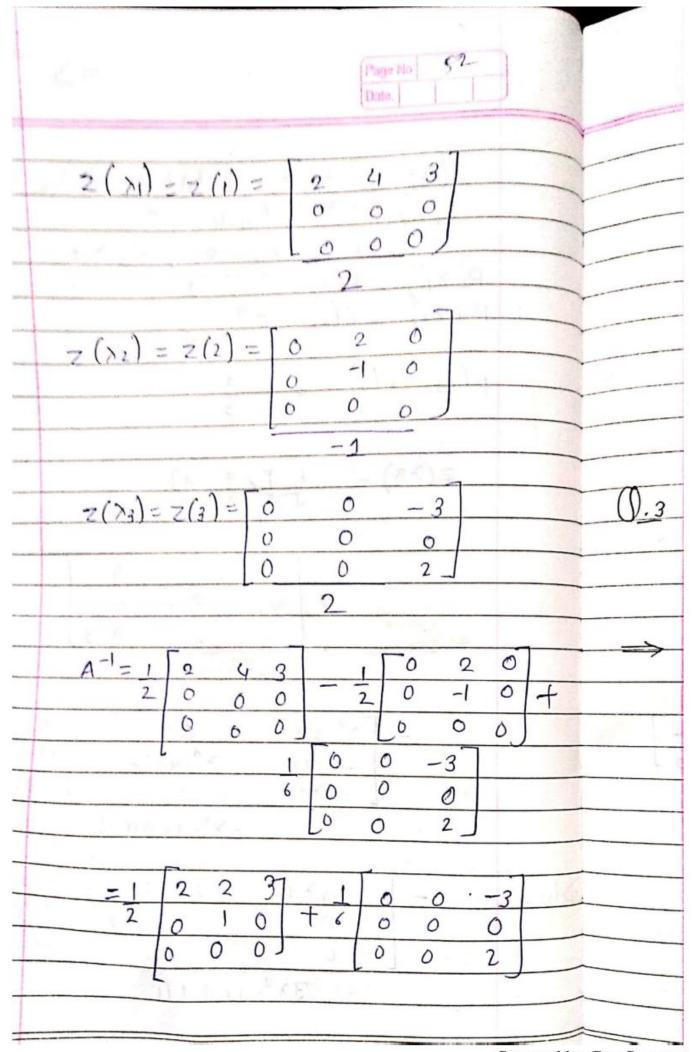
Frage fits 2.0	20	7-9-4-21 San
$\frac{\chi_1}{-24} = \frac{-\chi_1}{43} = \frac{\chi_3}{24}$		in assessment o
Quid by -24	1 21+2×2-3×3=0	→ 4 1
$x_1 = 1 x_2 = 2 x_3 = -1$		773-2
X1=-1 X2 Z	X2-[17	
X ₁ : [1]	X3: 1	
		and the second second
2		and a second of
-1		
	Moda Matrix B:	= 2 0 1
For >=-3		2 3 1
D = x1x1 + 2x2 - 3x3 = 0		-1 2 1
$(3) \Rightarrow -x_1 - 2x_2 - \lambda x_3 = 0$		
(3) - 1 - 2		
Here me have to find Values of 3		
There were to send varies of s	The state of the s	
Variable and we have only one egen		
3-1=2	The second second	(0) or 15
Thurston we have to asign two arbitary		
Values for two of the Vaniables.		April 10 miles
	el los els els rose	L Aut L
Let $x_1=0$ $x_2=3$ \Rightarrow $x_3=2$		No. of the second
X2= 0		
fina /		
83		La Maria
[2]		10,00

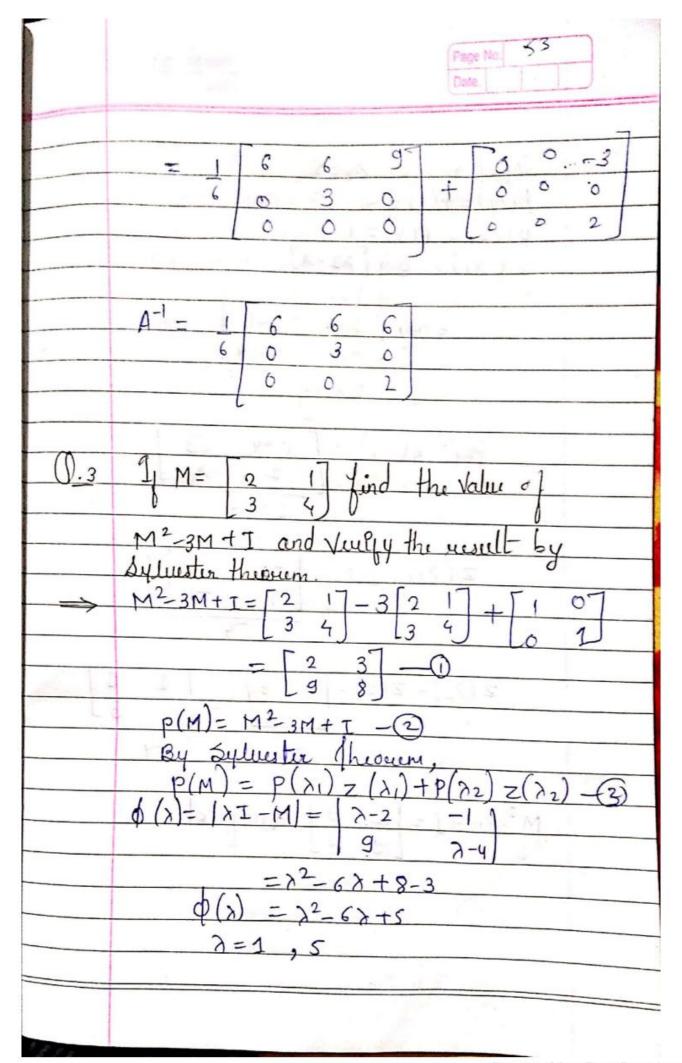


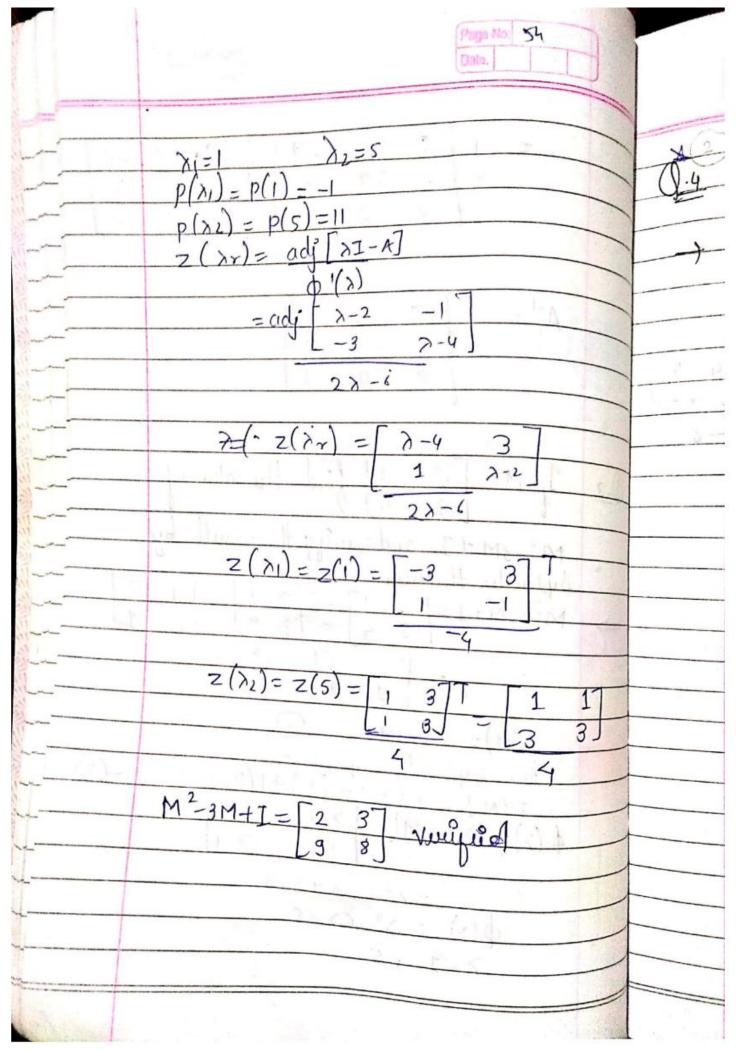
Monday	Page No. 49 Date 2 7 18
0.1	Find A 50 by using Sylves for's theorem for
	$A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 3 \end{bmatrix}$
	Jet p(A) = 150 0
	By dylvex ster Theorem P(A) = P(λ1) Z (λ1) + P (λ2) Z (λ2) Φ (λ) - λ T - λ - λ -
	$P(A) = P(\lambda_1) Z(\lambda_1) + P(\lambda_2) Z(\lambda_2)$
	101 K = 101 K
	$\phi(\lambda) = \lambda^2 - 4\lambda + 3$
	$\lambda^2 - 4\lambda + 3 = 0$
	7=1,3
	$\lambda_1 = 1$, $\lambda_2 = 3$
	$p(y_1) = b(1) = 1_{20}$ $p(y_1) = b(1) = 1_{20}$
	$\frac{p(\lambda z)}{z(\lambda z)} = \frac{p(3) - 3}{2(\lambda z)}$
	\$\frac{1}{\phi'(\lambda)} = \frac{1}{\phi'(\lambda)}
	E- 1 -A-
	$= adj \times -1 0$
	(O) \(\lambda - 3\)
	22-4
	= 7-3 OTT
-()	0 7-1
	27-4
	E- 1-1 - A - (1)D
	$Z(\lambda_2) = \lambda - 3 0 - 3$
	LO 3-1)



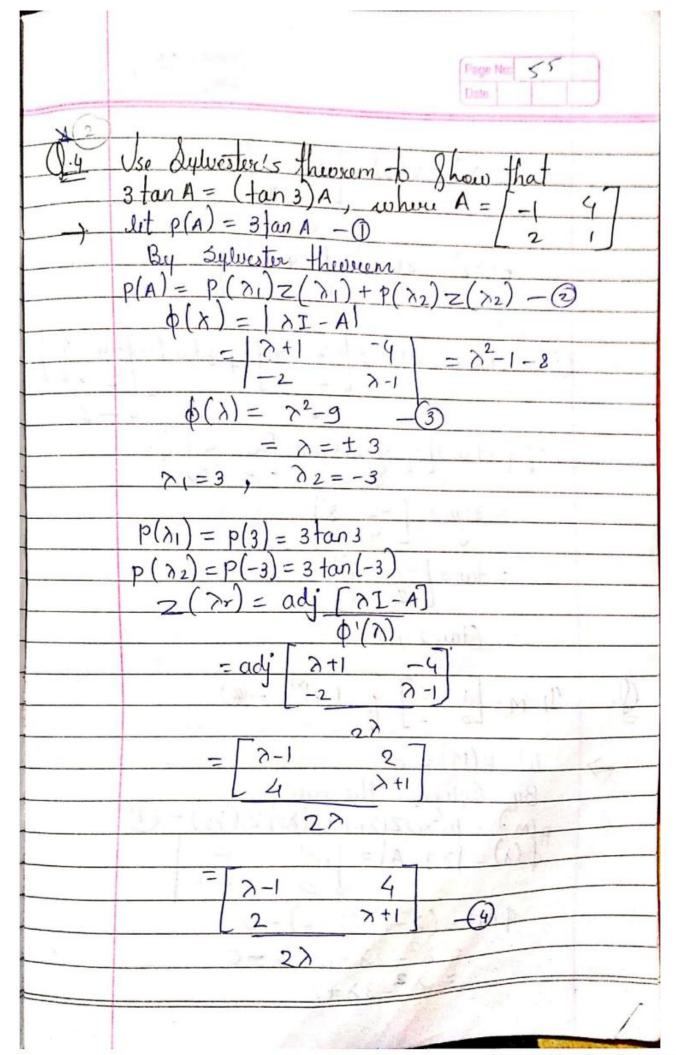


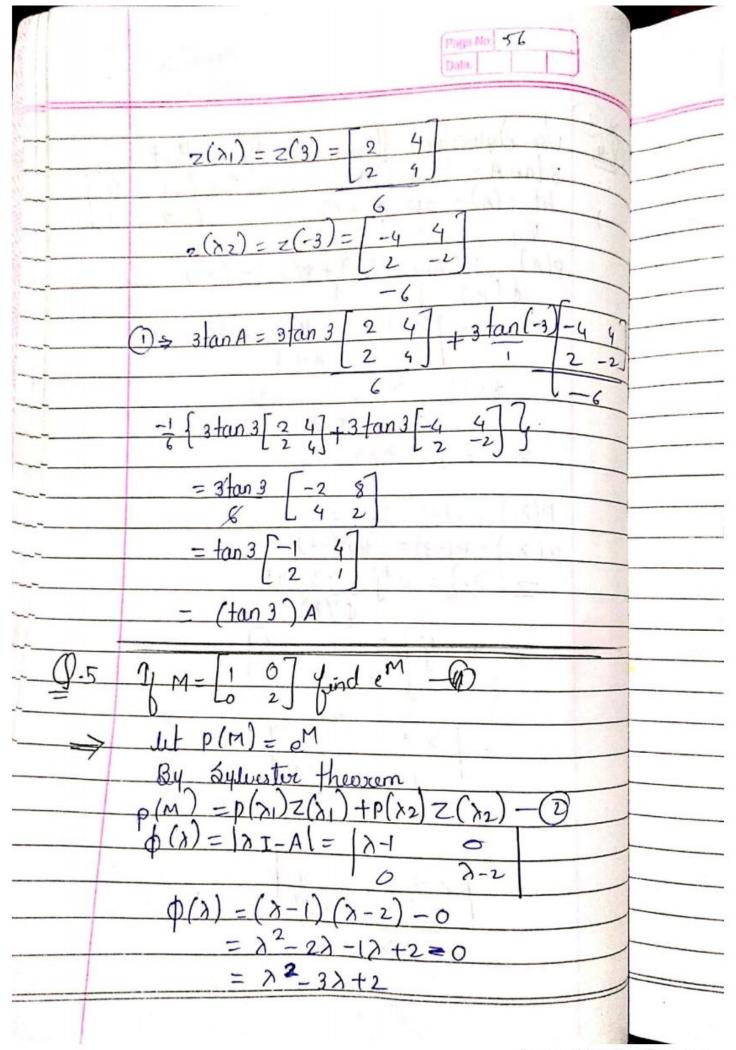




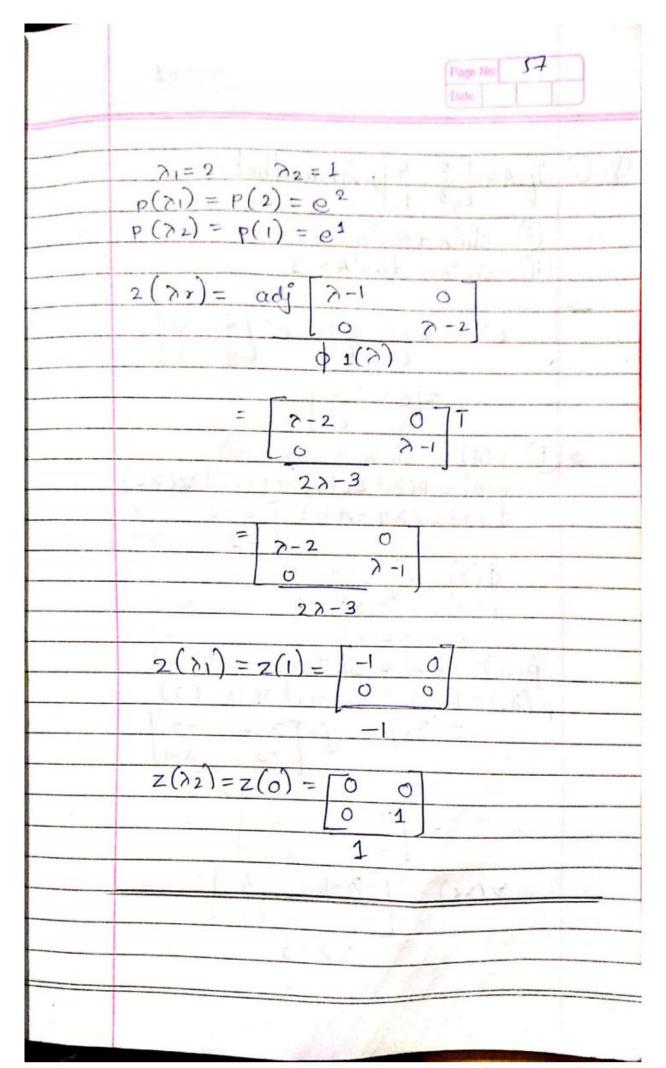


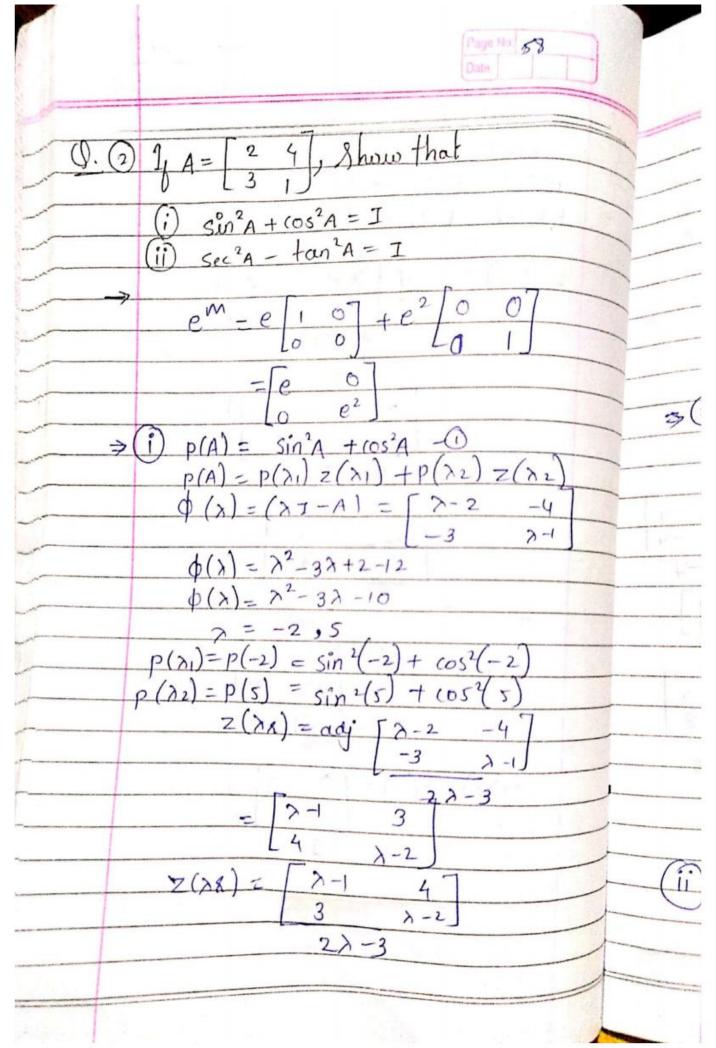
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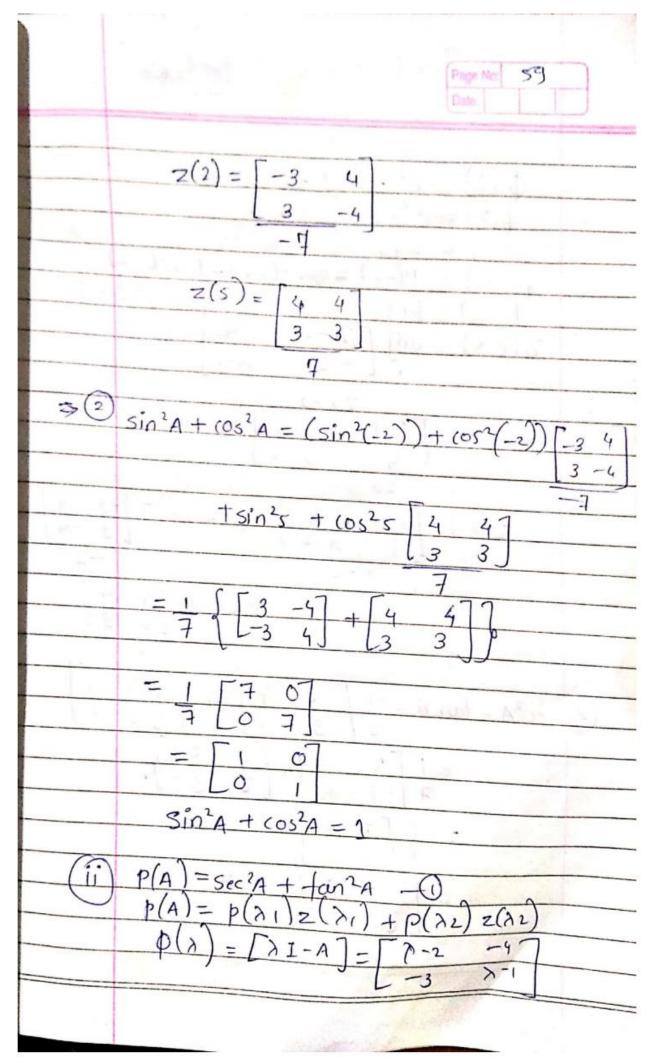


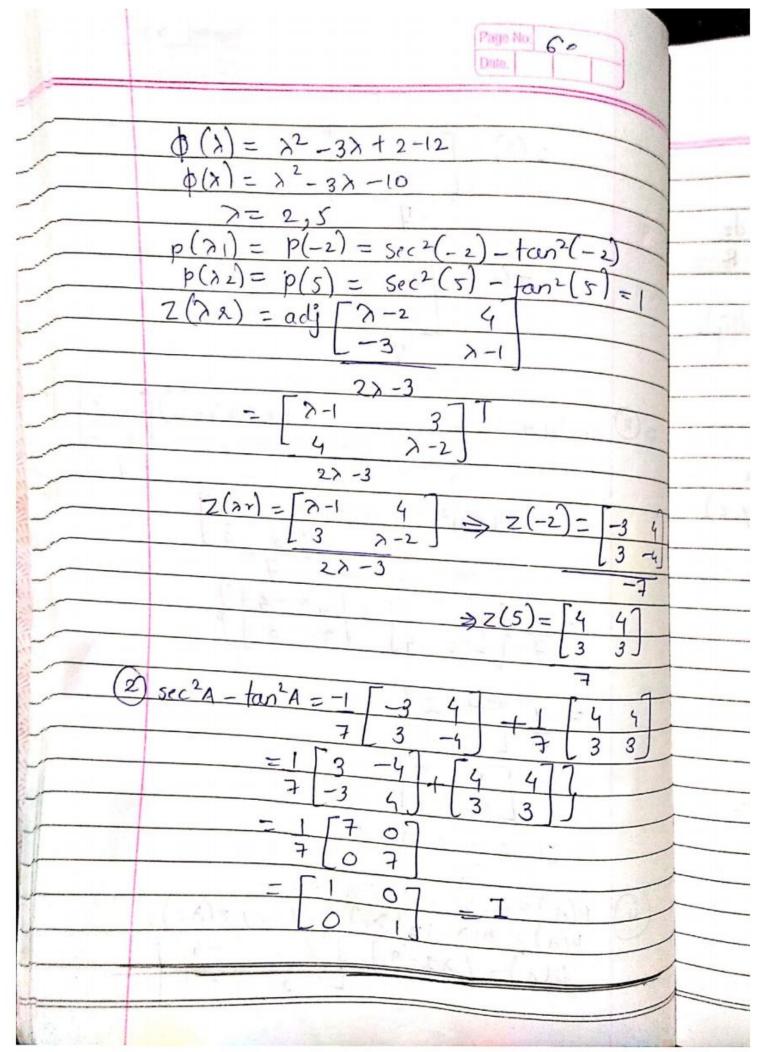
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