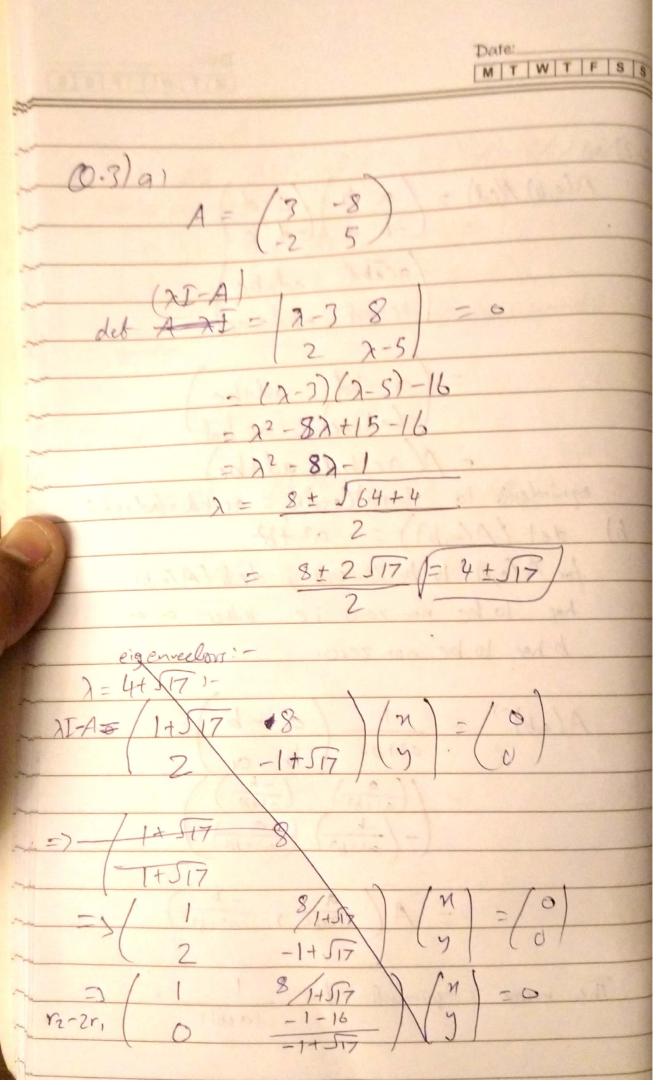
Date:
PHXS 2155 MITWIFE
Abriganent 1
0.1
a) A and I are upper friangular
i.e. Aij = o for i > j
ie. Aij = o for i > j Dij = o for i > j
THE RESERVE OF THE PARTY OF THE
WTS: AB is upper triangular
ie ABij = o prif isj
let i 2j.
ABij = ZAikBkj
K=1
= E Aik BK; + E Aik BK;
k=1 . k=1
= \(\frac{1}{2}\)\(\lambda\)\(\beta\)\(
kei kei
=> Aik =0 Kzizj
=> BKj=0)
0 +0 10 10 10 10 10 10 10 10 10 10 10 10 10
FOT AN OFN
A PART TO THE PROPERTY OF THE PARTY OF THE P

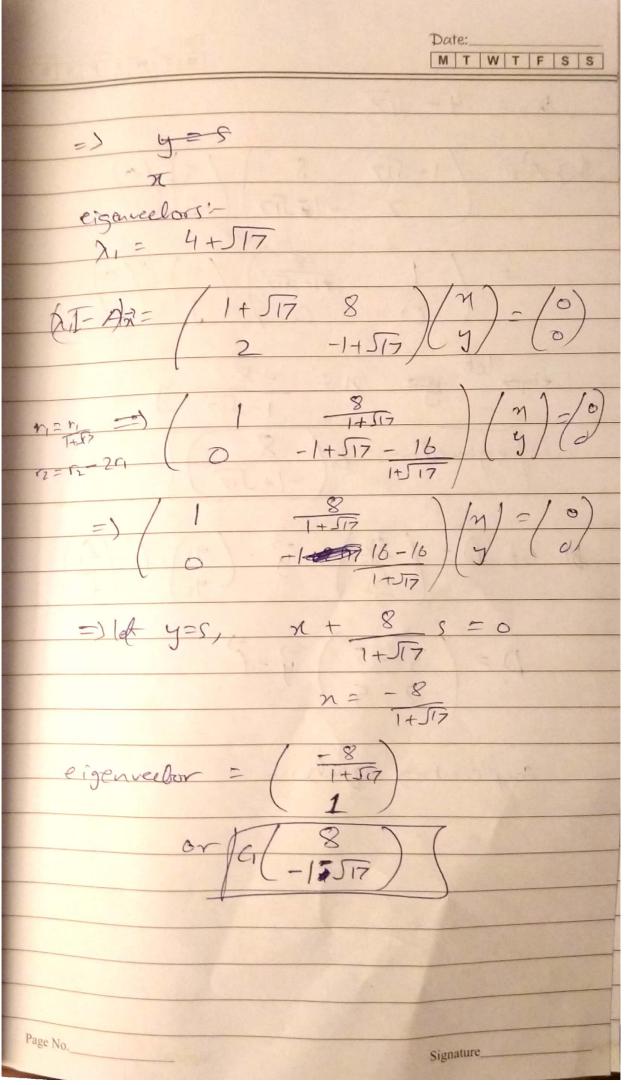
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M	T	W	T	F	S	S

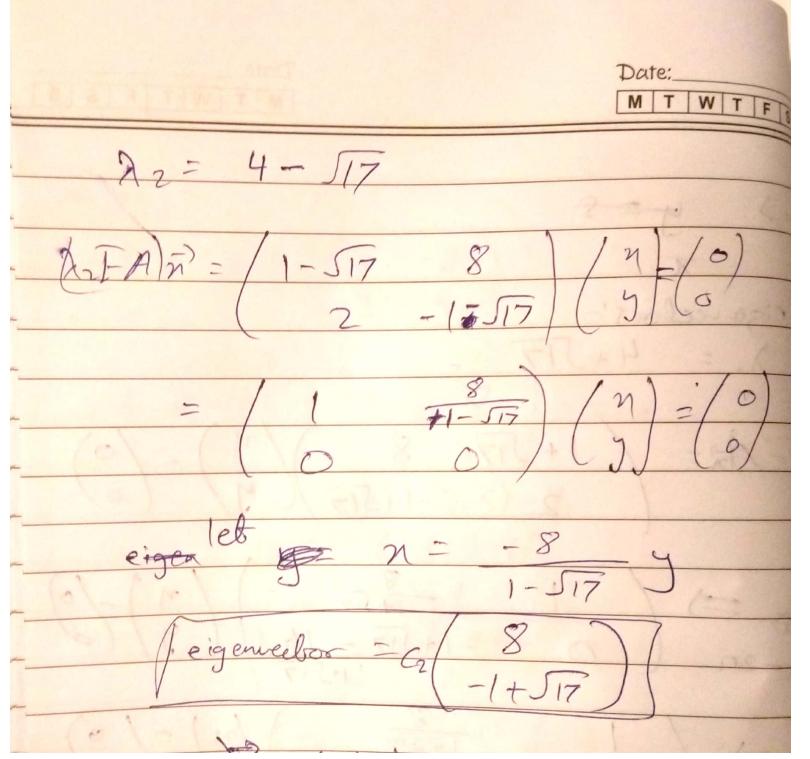
0.21 b) A and B are symmetric
=> A and == Oi
Aij=0 its B-0
$\Rightarrow A \text{ and } A = A^{T}$ $\Rightarrow A_{ij} = 0 i \neq j B = D^{T}$ $\Rightarrow B_{ij} = 0 i \neq j$
Let its wis (AD) = AB
let its
AB. INDIT NTAT = BA
ABI = (ADI = BTA = BA
$\begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix} \begin{bmatrix} 1 & -2 \\ -2 & 1 \end{bmatrix} = \begin{bmatrix} 6 & -2 \\ -2 & 2 \end{bmatrix}$
counterexample (-3
1 1 To 0 - So 1 / Not (gradric)
10)(01)(00)(3
(muchic syundric
9

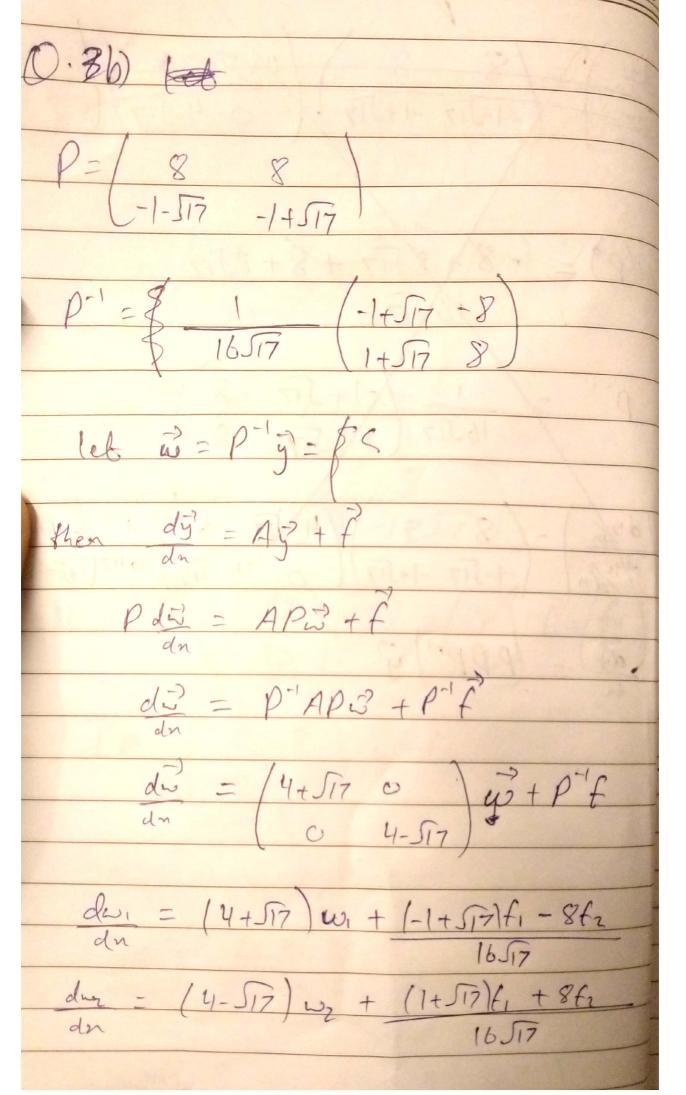
Date: M T W T F S
IVI T T T T T T T T T T T T T T T T T T
A'
0.10) #B (AD) - OB'A = (-D)(-A) = BA +-AB
Comberenarple
[0-1] [0 b] - [10]
[10 [-00] [01]
sken sken Not sken symmetrie
skew skew Not skew symmetrie symmetric symmetric
ix To The Total Control of the Contr
0.2d) A+=A B+=B
-9:60
$(AB)^{+} = B^{+}A^{+} = BA = AB$
-> AB is hermitian

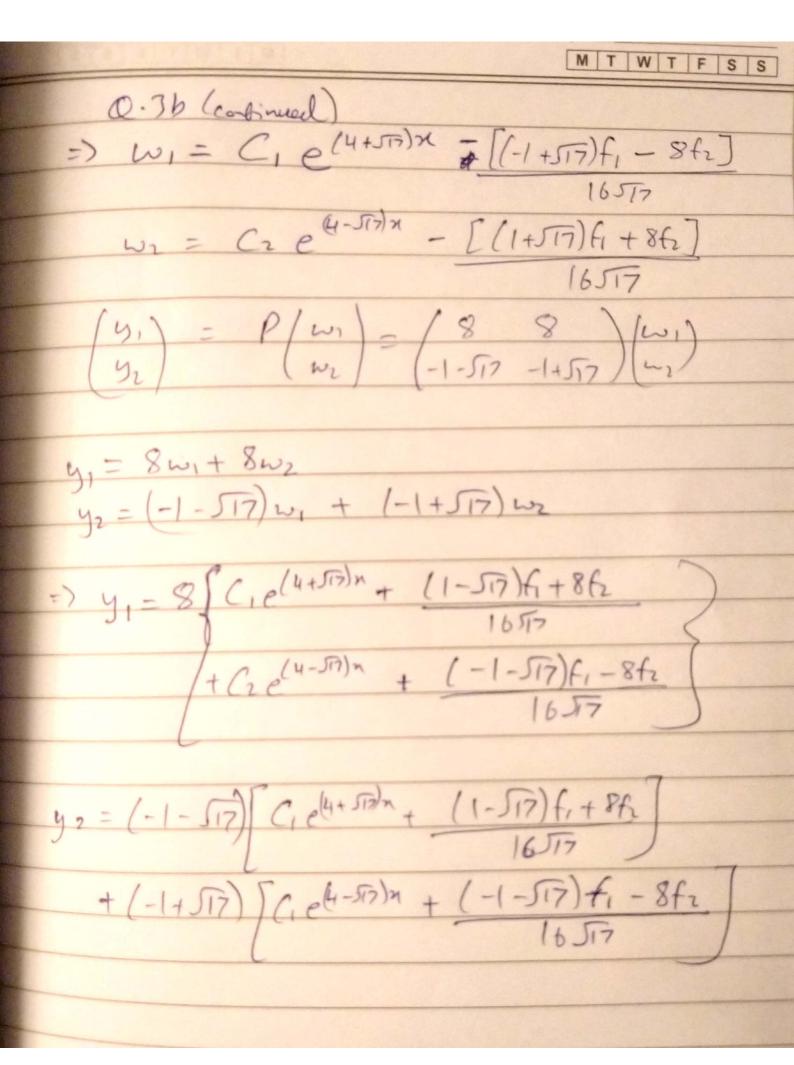
(22) a) Alab) Alab) = (ab) (cd) = facility ad+bc = (ac-bd ad+bc - (ad+bc) ac-bd - Alac-bd, ad+be equivalent to (atbi)(ctdi) = ac-bd+(ad+be)i b) det (A(a,b)) = a2+b2 for A (a,b) to be inverse, det (A (a,b) has to be non zero i.e either a or bhay to be non zero. $A(ab)^{-1} = \frac{1}{a^2 + b^2}$ /(a1+b2) A (a2+b2) a2+b2 The inverse is equivalent to -



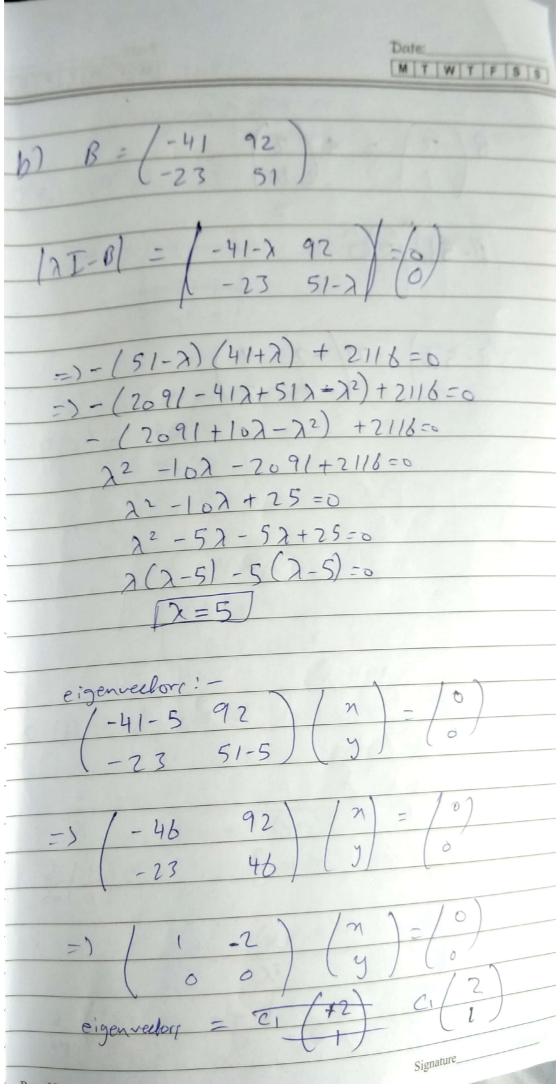


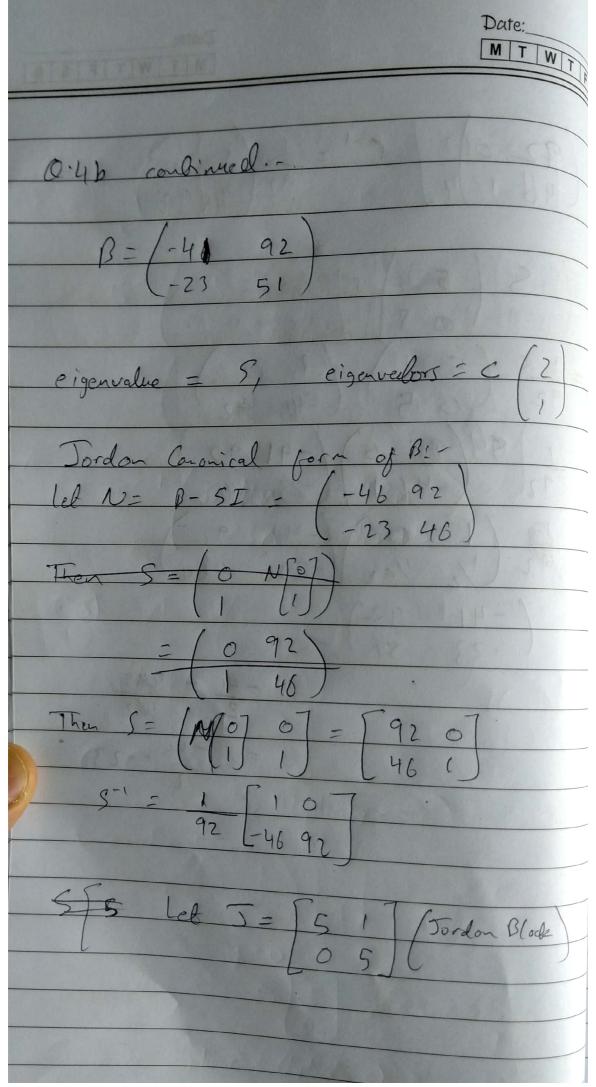






Date:
MTWTF
(0.4) a) A = / 1 2
01/
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Base case: n=1
$A' = A = \begin{pmatrix} 1 & \lambda \\ \end{pmatrix} = \begin{pmatrix} 1 & \lambda \\ \end{pmatrix}$
(01)(01)
Base case valid.
1K = (1 b)
Assume AK = (k)
WTS1-AKtl = / (Ktl))
Tant to
AK+1 = AAK = / 1 2 / 1 & k)
$A^{k+1} = AA^k = \begin{pmatrix} 1 & \lambda & 1 & 1 & 1 \\ 0 & 1 & 0 & 1 & 1 \end{pmatrix}$
$= \begin{pmatrix} 1 & k\lambda + \lambda \\ 0 & l \end{pmatrix}$
$= \left(1 \left(k+1\right)\right)$
which is what we would
to show
Since Ak- / 1 kg
Since $A^{k} = \begin{pmatrix} 1 & k \lambda \end{pmatrix}$ implies $A^{k+1} = \begin{pmatrix} 1 & (k+1)\lambda \end{pmatrix}$
$A^{n} = (n\rangle) / 2$
No. O T





Date:	Date: MTWTFSS
WTS:- D= 555-1 =-	17.1 [10]
555-1 = [92 -] [5 461] [0	5 92 (-46.92)
· [92 67 [-41	92]
- 1 592 0 7 5-41 92 46 1 6-230	460
	927
1/2 - 1-230 4	160
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$] - [-41 92 -B
C2 M2	
Hence B = 5 55-1	
Time	7 6 - 18 J 5-) SJ5-1
$B^n = (S55)^n $	3 3 (= 1
5- /5 1 -5/1	1/5
05) 6	
$5^n = 5^n \left(1 \right) $	from port(9)
11/22 01/1	1/5/(10)
=> 0 = 5 (46 1) (0	1) (-46 92)
en /92 0) /1-467	929
92 (46 1) (246	92)
- 1 / 1 0 / 1 - 465	5 924
1/2 1/22 -46	92)
	Market States
	all days
	Signature

