Day:	Muneeb Lone DS-B Date: //
	ASSIGNMENT #B Munul
	B ((1) (1) (20)
<u></u>	$\mathcal{B} = \left\{ \begin{pmatrix} 1 \\ 1 \end{pmatrix}, \begin{pmatrix} -1 \\ -1 \end{pmatrix}, \begin{pmatrix} -1 \\ 1 \end{pmatrix} \right\}$
1.	V= 4 Coordinate Vector = x1 = 1/2
1	$\begin{array}{c c} -3 & + \\ \hline 7 & -3/2 \\ \hline \end{array}$
	(1) -1 4
	1 -1 1/1-3
	1 -1 -1 7
= 5	
	0 (-2) 2 1-7 R2-R1
	0 -2 0 3 R3-R1
ţ. 	
	0 1 -1 14
	0 (2) 10 R3-R2
, 22 ()	721 N2 723
· John work	D - 1 4
-1	0 (2) 2 1-7
	6 0 0 110
	-2x3 = 10 - 0 $-2x2 - 10 = -7$
	$-2x^{2} + 2x^{3} = -7 + 2$ $-2x^{2} + 2x^{3} = -7 + 2$ $-2x^{2} + 2x^{3} = -7 + 2$
	71 + 22 22 23 - 1 73)
	$2x_1 - 3 + 5 = 4$ $2x_1 - 3 + 5 = 4$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$ $2x_1 = 4 - 5 + 3 = 1$
	7(3 = -5) $7(1 = 4 - 5 + 3 = 1)$ Yousaf
	-2x2+2(-5)=-7 Yousaf

Day:	8-20	Date: / /
2.	[u]B= /5 /= /x,	Hunsel
	-4 72	~
	1/ 23//	\ /!\]= a -105
	u=(B)([u]B)=5/1	4-4 1 +1 -1
2V :	AN solon strainer	-1 1
	u= 5 + -4 + -1 =	6
	5 4 1	10 cans
	, [2] [4] [-1]	[8]
—	Let C= {1+2t+t2,3	34 A . 542 }
Q2:	Let (= 11+2+++,3	- DL, - L + DL]
	x° = c1 + c2 = 0	As the system
1.	$\chi^{2} = c_{1} + c_{2} = 0$ $\chi^{4} = c_{1} + c_{2} + c_{3} = 0$	is consistent, we
		can deduce it
	X - C-	s linearly in dependent
	(D) 2 1 10 0	and hence is
	3 -3 0 1 0	a valid basis.
	0 -1 5 0 7	Dim C = 12+1=3
		Dim C = highest degree +1.
	0 2 1 0	
	O I	2-301
	[0 -1 5 1 0]	
	0 0 1 0 7	
	0 2 1 0 -22	13
	0 9 1	3+R2
- A - 1	0 0 (6) 0 1383	
,		Yousaf
1		

Day: Date: 5 + 10t + 5t2) + (-12 + 12t) + (-t +5t2) **Q3**: TD is linearly independent as M2 can clearly not be scalar multiples of each a=1 , b=0 > This a,bER basis Yousa

Date: Day: 4 T R2 -R3 R3-2R1 R4-R1 5K2 = 0 1 71-2 CZ = O 2 Z2=0 C1 = 0 is linearly independent basis for W Yousa

Dây:	Date: / /
	V= 5 3 w.r.t D and E
yama ancinciande collapsia neithropholicides comuni	(3 5) Musels
	N.R.7 D: [0 0 15]
AND THE PROPERTY OF THE SECOND PROPERTY OF THE PROPERTY OF T	0 1 3
	0 1 1 3
	0 0 3
n .	0 (D) 3 0 1 103 F
	0 0 0 R4-R1
-	(D) 0 157
	O D 13
	0 0 0 R3-R2
a —	The decide the second
	Coordinate Vector
	$c_1 = 5$, $c_2 = 3$
	Coordinate Vector = 5 = [V]D
2 —	w.r.t E:
2	S- 11/-2 1 5 S
3	2 1 3
	2 2 1/2-2 2 5 3 2 2
	Youse
	louse

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Day:	Date: / /
0 0 0 R2-R3 0 5 1-7 R2-221 0 0 1 0 R4-R1 0 -2 5 0 6 1-7 Suap R2, R3 0 0 0 0 Sc2 = -7 - D c1 - 2c2 = 5-2 c2 = -7 5 C1 = 5 + 14 = 39 5 5 Coordinate Vector= $\frac{39}{5}$ -7 4. UE = $\frac{5}{5}$ = $\frac{5}{5}$ $\frac{1}{5}$ $\frac{1}$		D-2 5
0 0 1 0 \mathbb{R}_{4} \mathbb{R}_{1} 0 0 0 0 \mathbb{R}_{4} \mathbb{R}_{1} 0 0 0 0 0 \mathbb{R}_{4} \mathbb{R}_{2} 0 0 0 0 0 \mathbb{R}_{4} \mathbb{R}_{2} 5c ₂ = -7 D c ₄ - 2c ₂ = 5 D c ₄ - 2c ₂ = 5 D c ₅ S Coordinate Vector = \mathbb{R}_{2} \mathbb{R}_{3} 4. \mathbb{R}_{4} = \mathbb{R}_{3} = \mathbb{R}_{3} \mathbb{R}_{4} = \mathbb{R}_{4} = \mathbb{R}_{3} \mathbb{R}_{4} = $$	L.	
0 - 2 = 5 $0 = 5 = 7$ $0 = 5 = 7$ $0 = 5 = 7$ $0 =$		
Sc2 = -7 - (1) Sc2 = -7 - (1) C1 - 2c2 = 5 - (2) C2 = -7 C1 = 5 + 14 = 39 S S Coordinate Vector = $\frac{39}{5}$ -7 = $\frac{39}{5}$ -9 = $\frac{39}{5}$ -1 = $$		0 0 1 0 1 R4-R1
Sc2 = -7 - (1) Sc2 = -7 - (1) $C1 - 2c2 = 5 - (2)$ $C2 = -7$ $C1 = 5 + 14 = 39$ $C2 = -7$ $C39$ $C3$		0 3 3 5
Sc2 = -7 - 10 $c_1 - 2c_2 = 5 - 20$ $c_2 = -7$ $c_3 - 2c_2 = 5 - 20$ $c_4 - 2c_2 = 5 - 20$ $c_4 = 5 + 19 = 39$ $c_5 = 6$ Coordinate Vector= $\frac{39}{5}$ $-\frac{7}{5}$ $c_4 = c_4 \left(1 + \frac{2}{2}\right) + \frac{4}{5} + c_2 \left(-\frac{2}{2}\right) + \frac{1}{2}$ $c_4 = c_4 \left(1 + \frac{2}{2}\right) + \frac{4}{5} + c_2 \left(-\frac{2}{2}\right) + \frac{1}{2}$ $c_4 = c_4 \left(1 + \frac{2}{2}\right) + \frac{4}{5} + c_2 \left(-\frac{2}{2}\right) + \frac{1}{2}$ $c_5 = \frac{1}{2}$ $c_4 = c_4 \left(1 + \frac{2}{2}\right) + \frac{4}{5} + c_2 \left(-\frac{2}{2}\right) + \frac{1}{2}$ $c_5 = \frac{1}{2}$ $c_6 = \frac{1}{2}$ $c_6 = \frac{1}{2}$ $c_6 = \frac{1}{2}$ $c_6 = \frac{1}{2}$ $c_6 = \frac{1}{2}$		0 -2 (5)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		0 (5) 1-7 Swap R2,R3
Sc2 = -7 (1) $c_1 - 2c_2 = 5$ (2) $c_2 = -7$ $c_3 - 2c_2 = 5$ $c_4 - 2c_2 = 5$ $c_4 - 2c_2 = 5$ c_5 Coordinate Vector: $\begin{bmatrix} \frac{39}{5} \\ -\frac{7}{5} \end{bmatrix}$ $c_4 - c_4 = \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ + c_2 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix}$ $u = c_4 = \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix}$ $u = \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix}$ $u = \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix}$ $u = \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix}$ $u = \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix}$ $v = \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 1 \end{bmatrix} + \begin{bmatrix} $		
$5cz = -7 - D$ $c1 - 2cz = 5 - D$ $c2 = -7$ 5 $c1 = 5 + 14 = 39$ $5 = 5$ $Coordinate Vector = \begin{bmatrix} \frac{39}{9} \\ -\frac{7}{3} \end{bmatrix}$ $4. U = 5 = 5 = 5$ $2 + 4 + 2 = 5 = 5$ $2 $		0 0500
$c_{1} - 2c_{2} = 5 - 2$ $c_{2} = -7$ $c_{3} = 5 + 14 = 39$ $c_{4} \cdot U = -5 = 0$ $u = c_{1} \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $v = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $v = 5 \cdot 10 + (8 - 4) = (13 - 6) \cdot 6$ $v = 5 \cdot 10 \cdot 1 \cdot 8 - 4 \cdot 8 \cdot 6 \cdot 13$		
$c_{1} - 2c_{2} = 5 - 2$ $c_{2} = -7$ $c_{3} = 5 + 14 = 39$ $c_{4} \cdot U = -5 = 0$ $u = c_{1} \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $u = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $v = 5 \cdot 1 \cdot 2 + c_{2} \cdot 1$ $v = 5 \cdot 10 + (8 - 4) = (13 - 6) \cdot 6$ $v = 5 \cdot 10 \cdot 1 \cdot 8 - 4 \cdot 8 \cdot 6 \cdot 13$		5c2 = -7 -ED
$c_{2} = -\frac{1}{5}$ $c_{1} = 5 + 14 = 39$ $c_{2} = 5$ $c_{3} = 5$ $c_{3} = 5$ $c_{4} = 5$ $c_{2} = 5$ $c_{2} = 6$ $c_{2} = 6$ $c_{3} = 6$ $c_{4} = 6$ $c_{2} = 6$ $c_{2} = 6$ $c_{3} = 6$ $c_{4} = 6$ $c_{2} = 6$ $c_{2} = 6$ $c_{3} = 6$ $c_{4} = 6$ $c_{2} = 6$ $c_{4} = 6$ $c_{5} = 6$ $c_{6} = 6$		(1-262=5-2)
$C1 = 5 + 14 = 39$ $Coordinate Vector = \begin{bmatrix} 39 \\ -7 \\ -7 \end{bmatrix}$ $U = \begin{cases} C \\ -4 \end{cases} = \begin{bmatrix} C \\ C \\ 2 \end{bmatrix}$ $U = 5 \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 4 \\ -2 \end{bmatrix} = \begin{bmatrix} 13 \\ 6 \end{bmatrix}$ $U = \begin{cases} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 4 \\ 8 \end{bmatrix} = \begin{bmatrix} 13 \\ 6 \end{bmatrix}$ $U = \begin{cases} 13 \\ 10 \end{bmatrix}$		
C1 = 5 + 14 = 39 Coordinate Vector= $\begin{bmatrix} 39 \\ -7 \\ -7 \end{bmatrix}$ 4. UE = $\begin{bmatrix} 5 \\ -4 \end{bmatrix}$ = $\begin{bmatrix} c_1 \\ c_2 \end{bmatrix}$ $U = c_1 \begin{bmatrix} 1 \\ 2 \end{bmatrix} + \begin{bmatrix} 4 \\ -2 \end{bmatrix} = \begin{bmatrix} 13 \\ 6 \end{bmatrix}$ $U = \begin{bmatrix} 5 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 4 \end{bmatrix} + \begin{bmatrix} 4 \\ 8 \end{bmatrix} = \begin{bmatrix} 13 \\ 6 \end{bmatrix}$ $U = \begin{bmatrix} 5 \\ 10 \end{bmatrix} + \begin{bmatrix} 8 \\ -4 \end{bmatrix} = \begin{bmatrix} 13 \\ 6 \end{bmatrix}$ Ang.		021 -0 0
Coordinate Vector= $\begin{bmatrix} \frac{39}{5} \\ -\frac{7}{5} \end{bmatrix}$ 4. $U = (S) = (C_1) \\ (C_2) = (C_2) \\ U = (C_1) = (C_2) \\ U = (C_1) = (C_2) \\ U = (C_2) = (C_1) \\ U = (C_2) = (C_2) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U$		5=1.60
Coordinate Vector= $\begin{bmatrix} \frac{39}{5} \\ -\frac{7}{5} \end{bmatrix}$ 4. $U = (S) = (C_1) \\ (C_2) = (C_2) \\ U = (C_1) = (C_2) \\ U = (C_1) = (C_2) \\ U = (C_2) = (C_1) \\ U = (C_2) = (C_2) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U = (C_2) = (C_1) \\ U = (C_1) = (C_1) \\ U$		5,55,14 5 39 5
Coordinate Vector= $\begin{bmatrix} \frac{39}{5} \\ -\frac{7}{5} \end{bmatrix}$ 4. $U = (S) = (C_1)$ $U = (C_2)$ $U = (C_1) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_2) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_1) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_1) = (C_2)$ $U = (C_2) = (C_1)$ $U = (C_1) = (C_2)$ $U = (C_1) = (C_1)$ $U = (C_1) $		5 5
4. $U = \begin{cases} S \\ -4 \end{cases} = \begin{cases} C_1 \\ C_2 \end{cases}$ $U = c_1 \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} + \begin{pmatrix} 4 & -2 & 1 \\ 1 & -2 \end{pmatrix}$ $U = S \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} - 4 \begin{pmatrix} -2 & 1 \\ 1 & -2 \end{pmatrix}$ $U = \begin{pmatrix} 5 & 10 \\ 10 & 5 \end{pmatrix} + \begin{pmatrix} 8 & -4 \\ -4 & 8 \end{pmatrix} = \begin{pmatrix} 13 & 6 \\ 6 & 13 \end{pmatrix}$ Ang.		1 1 1 1/2 1/2 39
4. $U = \begin{cases} S \\ -4 \end{cases} = \begin{cases} C_1 \\ C_2 \end{cases}$ $U = C_1 \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} + \begin{pmatrix} 2 & -2 & 1 \\ 1 & -2 \end{pmatrix}$ $U = S \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} - \begin{pmatrix} 4 & -2 & 1 \\ 1 & -2 \end{pmatrix}$ $U = \begin{pmatrix} 5 & 10 \\ 2 & 1 \end{pmatrix} + \begin{pmatrix} 8 & -4 \\ -4 & 8 \end{pmatrix} = \begin{pmatrix} 13 & 6 \\ 6 & 13 \end{pmatrix}$ $U = \begin{pmatrix} 10 & 5 \end{pmatrix} + \begin{pmatrix} 8 & -4 \\ -4 & 8 \end{pmatrix} = \begin{pmatrix} 13 & 6 \\ 6 & 13 \end{pmatrix}$		-7
$u = c1 \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} + c2 \begin{pmatrix} -2 & 1 \\ 1 & -2 \end{pmatrix}$ $u = 5 \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} - 4 \begin{pmatrix} -2 & 1 \\ 1 & -2 \end{pmatrix}$ $v = \begin{pmatrix} 5 & 10 \\ 10 & 5 \end{pmatrix} + \begin{pmatrix} 8 & -9 \\ -9 & 8 \end{pmatrix} = \begin{pmatrix} 13 & 6 \\ 6 & 13 \end{pmatrix}$ Ang.		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
$u = c1 \begin{pmatrix} 1 & 2 & +4 & c2 & -2 & 1 \\ 2 & 1 & 2 & -4 & -2 & 1 \\ 2 & 1 & 2 & -4 & -2 & 1 \\ 2 & 1 & 2 & -2 & 1 \\ 2 & 1 & 2 & -2 & 1 \\ 2 & 1 & 2 & 2 & 2 \\ 2 & 1 & 2 & 2 \\ 2 & 1 & 2 & 2 \\ 2 & 1 & 2 & 2 \\ 2 & 1 & 2 & 2 \\ 2 & 1 & 2 $	4.	CIE -/ S
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		(-4=/
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		1 -2 1
$u = 5 \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} - 4 \begin{pmatrix} -2 & 1 \\ 1 & -2 \end{pmatrix}$ $v = \begin{pmatrix} 5 & 10 \\ 10 & 5 \end{pmatrix} + \begin{pmatrix} 8 & -4 \\ -4 & 8 \end{pmatrix} = \begin{pmatrix} 13 & 6 \\ 6 & 13 \end{pmatrix}$ Ang.		1 4
$\frac{(2 + 1)(1 - 2)}{(2 + 5)(0) + (8 - 4) = (13 + 6)}$ $\frac{(3 - 2)}{(4 - 4)(8) = (13 + 6)}$ $\frac{(4 - 2)}{(4 - 4)(8) = (13 + 6)}$		2 1 -21
$v=/5$ 10) + $\begin{pmatrix} 8 & -4 \\ -4 & 8 \end{pmatrix} = \begin{pmatrix} 13 & 6 \\ 6 & 13 \end{pmatrix}$ Ang.		
(10 5) (-4 8) (6 13)		
(10 5) (-4 8) (6 13)		12-/5 10 + /8 -4 = / 13 6 Aug.