5 Nov 24

Homework 8

(Jo1)

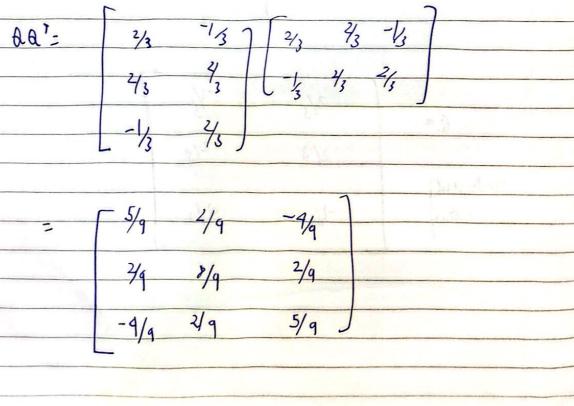
$$V_1 = (2_1 2_1 - 1)$$
 $V_2 = (-1_1 2_1 2_1)$ 

$$q_1 = \left(\frac{2}{3}, \frac{2}{3}, \frac{-1}{3}\right)$$

$$q_{2} = \left(\frac{-1}{3}, \frac{1}{3}, \frac{2}{3}\right)$$

2/3 -1/3 2/3 2/3 (orthogonal) Mathix -1/3 2/3

classmate
Date
Page
1. 7
12
<i>y</i> <sub>3</sub>
21
73
( )
2/3
13
0 =
1.54011
*
1
7
-1, 1
-13



2/3

7

QTQ=

Ξ

(D2)			(40)
An)	plane $x+y+2z=0$		
-		(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	+
	1) 2=0, x=1,y=-1		
	7 77	Appropriately slike	
	V,= (1,-1,0)	)	
		( usalvi	
	2=1,2=1,2=-1	orthogonal vides	
		s restation silon	
	v <sub>2</sub> = (1, 1, -1)	J	
	V. 1.1.4.5.6	( + 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	V1.V2 = 1-1+0= 0		
		. p / p . A = 2	-
	1/4/1: V2	14 44 100	
	1/211= 5		
	The Alexander Carle Walley	The state of the s	
	· · · · · · · · · · · · · · · · · · ·	81	
	$\frac{2}{\sqrt{2}} \left( \frac{1}{\sqrt{2}}, \frac{-1}{\sqrt{2}}, 0 \right)$	) ()	
	15. 5.	Orthonormal huders.	-
	$\frac{q_2}{\sqrt{5}}$ $\left(\frac{1}{\sqrt{5}}, \frac{1}{\sqrt{5}}, \frac{-1}{\sqrt{5}}\right)$	J 12 14 12 14 15 17 15	
-	( ) 13 /3/	•	
		7	

Oz) Aud

119/1: 1/432+92+52+72

11611: 1 (2464)24 = 1052

Proje 6 = (b.g.) 21

b.1 = 1 (-4+++) (-6 X 1+1X3+ 8X4 + 0 X 20.5 + 6x7)

- 10

Migh = (13,4,5,7)

a   = 71 + 32 + 41 + 42 + 41 +		Page	=0
$  u_1   = 71 + 3^2 + 4^3 + 5^2 + 5^2 +$			1
$\frac{1}{2} = \frac{1}{16} \left( -\frac{7}{13}, \frac{9}{1}, -\frac{1}{10} \right)$ $\frac{1}{16}$	_		
2, = 1 (-7,3,9,-3,1)  16  9,1,92 are othernormal retorn.	4   = 171+32+425242		
9, 9; are other wither.	= 10	- Joseph -	
9, 9; are otherwood within.	0 + 0 + 3 - 1 + 1 + 1	1	1 21
91) 92 are orthonormal rection.	: 92= 1 (-7,3,4,-5,1)		
	16	JP"	
	 21, 92 are orthonormal kitors.	were just	
	(44 B/2 + 12/2 + 11/2 + 11/2 + 2/1 +		
			104
		in the first party	

1					-	
4	V2	1	0	, 0	0	,
The second secon	THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW		•			•

$$A = \begin{bmatrix} 1 & 1 \\ 2 & -1 \\ -2 & 4 \end{bmatrix}$$

$$\begin{pmatrix} 1 \\ 2 \\ 2 \end{pmatrix}$$
  $\begin{pmatrix} q_2 \\ \vdots \\ 4 \end{pmatrix}$ 

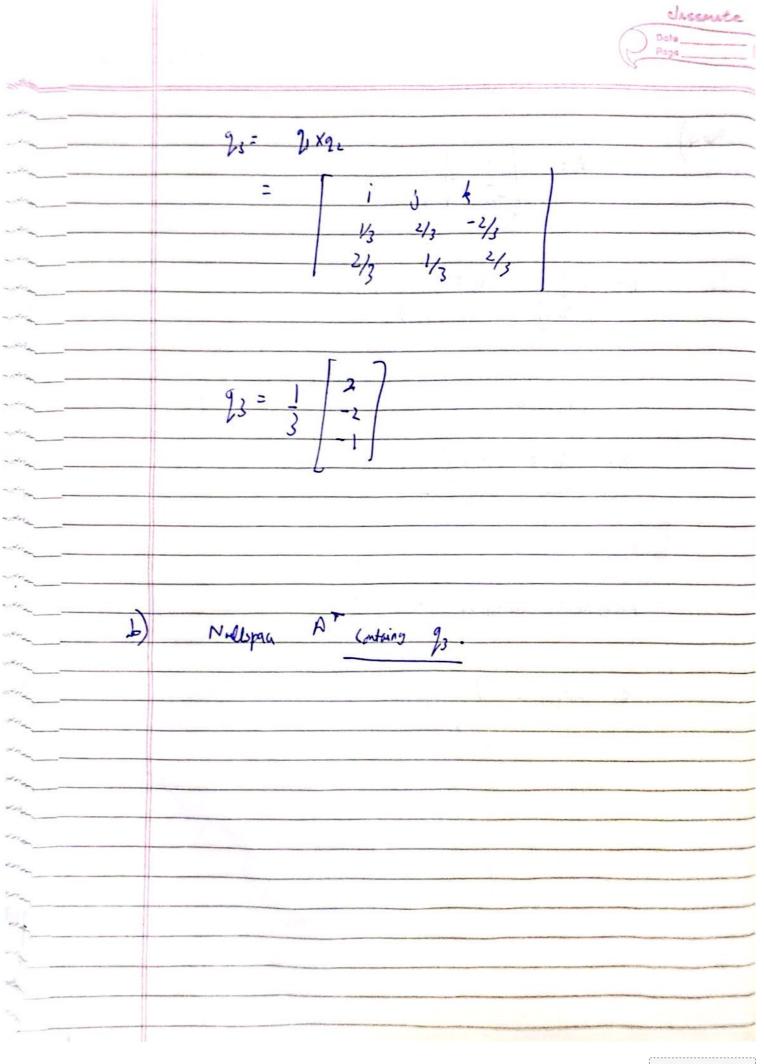
$$q_1 = q_1 = \frac{1}{3} \begin{bmatrix} \frac{1}{2} \\ -\frac{1}{2} \end{bmatrix}$$

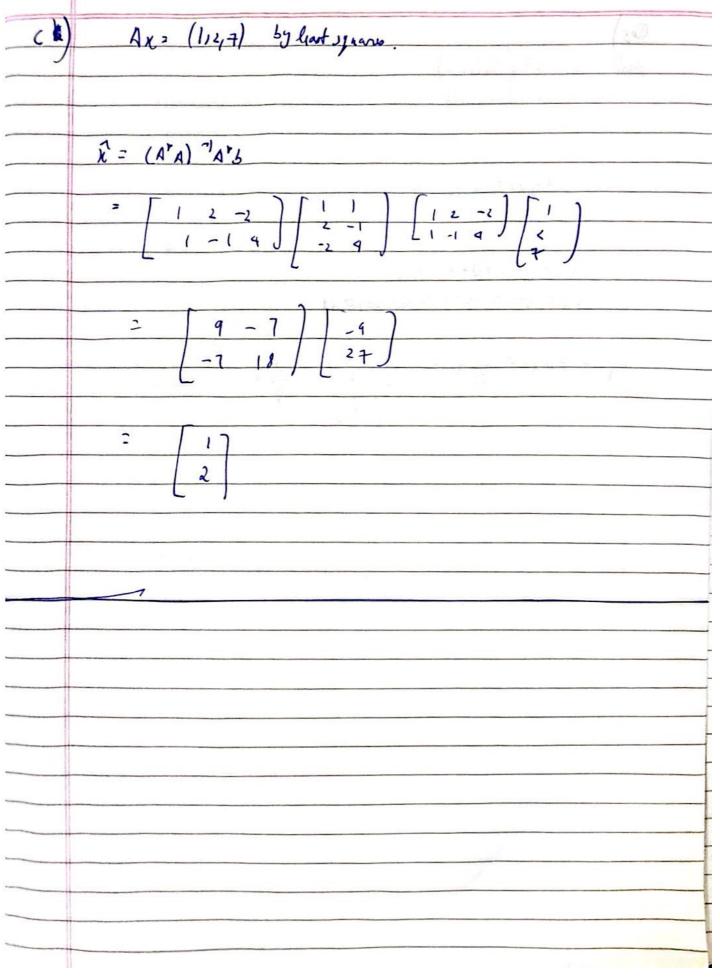
$$projq_1 q_2 = q_2 \cdot q_1 q_2 = \begin{cases} -1 \\ 2 \\ 2 \end{cases}$$

$$v_1 = q_2 - \rho_{0j_1} q_2 = \begin{bmatrix} 2 \\ 1 \\ 2 \end{bmatrix}$$

$$q_2 = \frac{7}{3} \begin{bmatrix} 2 \\ 1 \\ 2 \end{bmatrix}$$







4.1	0	5
	A	1

4=	(415)	. ,	,
	-		

$$q_1 = \frac{a}{\|\mathbf{q}\|} = \frac{1}{7} \begin{bmatrix} 4 \\ 5 \\ 2 \end{bmatrix}$$

$$B = b - p = b - \frac{2}{7}$$

$$= \frac{1}{2} \left( -1, 4, -4, -4 \right)$$

2, 22 ortrornomal

Q06)	
Ans	a = (1,-1,0,0)
,	5=(0,1,-1,0

a= (1,1,1,1)

c= (0,0,1,-1)

2) Projab = 
$$\begin{pmatrix} b \cdot A \\ A \cdot A \end{pmatrix}$$

$$= \left(\frac{-1}{2}\right) \left(\frac{1}{1},\frac{-1}{0},0\right)$$

$$\frac{3)}{A \cdot A} = 0$$

C.A - 0

projec =	(c.B)	A
7 0 5	B.s	

connogenal A,B,C

