

Math 290

Thursday, April 29

Problem Session

VR. M20

Fri - CB ^{Reading Scores}

BYOB - Summer

Mon -

Housekeeping

Problems

Writing R ^{Writing Scores}

Tue

Exam R

$f_B: P_3 \rightarrow \mathbb{C}^4$ "Formula" for f_B

$B = \{ \underline{v}_1, \underline{v}_2, \underline{v}_3, \underline{v}_4 \}$

$$f_B(\underline{v}_1) = \underline{e}_1 \quad f_B(\underline{v}_3) = \underline{e}_3$$

$$f_B(\underline{v}_2) = \underline{e}_2 \quad f_B(\underline{v}_4) = \underline{e}_4$$

$$f_B(\underline{v}) = f_B(a_1 \underline{v}_1 + a_2 \underline{v}_2 + a_3 \underline{v}_3 + a_4 \underline{v}_4)$$

$$= a_1 f_B(\underline{v}_1) + a_2 f_B(\underline{v}_2) + a_3 f_B(\underline{v}_3) + a_4 f_B(\underline{v}_4)$$

$$= a_1 \underline{e}_1 + a_2 \underline{e}_2 + a_3 \underline{e}_3 + a_4 \underline{e}_4$$

$$= \begin{bmatrix} a_1 \\ a_2 \\ a_3 \\ a_4 \end{bmatrix}$$

$$\underline{v} = a_1 \underline{v}_1 + a_2 \underline{v}_2 + a_3 \underline{v}_3 + a_4 \underline{v}_4$$

$$a + bx + cx^2 + dx^3 = a(1 - 5x - 22x^2 + 3x^3) + \dots + a_4(-1 + 4x + 16x^2 + x^3)$$

System

$$\begin{bmatrix} 1 \\ -5 \\ -22 \\ 3 \end{bmatrix} - 2 \begin{bmatrix} -1 \\ 4 \\ 16 \\ 1 \end{bmatrix} - 1 \begin{bmatrix} -1 \\ 4 \\ 16 \\ 1 \end{bmatrix} \begin{bmatrix} a_1 \\ a_2 \\ a_3 \\ a_4 \end{bmatrix} = \begin{bmatrix} a \\ b \\ c \\ d \end{bmatrix}$$

$$\begin{bmatrix} a_1 \\ a_2 \\ a_3 \\ a_4 \end{bmatrix} = \begin{bmatrix} \\ \\ \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \\ \\ \end{bmatrix}^{-1} \begin{bmatrix} a \\ b \\ c \\ d \end{bmatrix}$$