

and
$$[g]_{B'} = \begin{pmatrix} -7 & -13 \\ 5 & 7 \end{pmatrix}$$
. Determine the matrices $[2f]_B$, $[f+g]_B$ and $[f \circ g]_{B'}$. (Use the matrices of change of basis.)

2. In the real vector space \mathbb{R}^2 consider the bases $B = (v_1, v_2) = ((1, 2), (1, 3))$ and B' = $(v_1', v_2') = ((1, 0), (2, 1))$ and let $f, g \in End_{\mathbb{R}}(\mathbb{R}^2)$ having the matrices $[f]_B = \begin{pmatrix} 1 & 2 \\ -1 & -1 \end{pmatrix}$

$$[(1+3)_{6} = (1)_{6} + 23]_{6}$$

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$$=(a+b, 2c+3b)=(2,1)$$

$$2c+3b=2 = 10 = 2-b = 20 = 5$$

$$2c+3b=1 = 3b = 1 = 3b = -3$$

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$$2c$$

$$= \begin{pmatrix} -20 & -32 \\ 13 & 20 \end{pmatrix} = \begin{cases} 3 \\ 6 \\ 13 & 20 \end{cases} = \begin{cases} 1 \\ 2 \\ 1 \\ 1 \end{cases} + \begin{pmatrix} -20 & -32 \\ 2 \\ 1 \end{cases} = \begin{cases} -10 & -32 \\ 12 & 13 \end{cases} = \begin{cases} -10 & -32 \\ 12 & 13 \end{cases} = \begin{cases} -10 & -32 \\ 12 & 13 \end{cases} = \begin{cases} -10 & -32 \\ 12 & 13 \end{cases} = \begin{cases} -10 & -32 \\ 12 & 13 \end{cases} = \begin{cases} -20 & -32 \\ 12 & 13 \end{cases} =$$

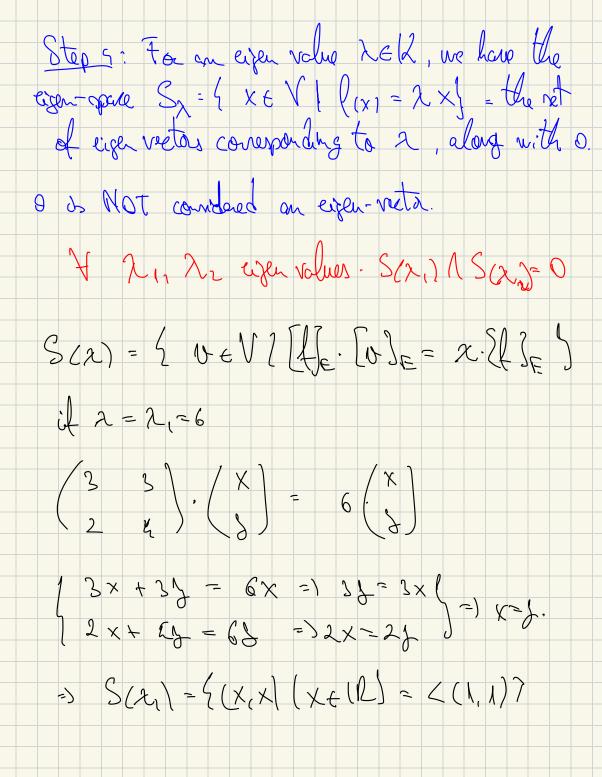
4. Let $f \in End_{\mathbb{R}}(\mathbb{R}^2)$ be defined by f(x,y) = (3x + 3y, 2x + 4y).

(i) Determine the eigenvalues and the eigenvectors of f.

(ii) Write a basis B of \mathbb{R}^2 consisting of eigenvectors of f and $[f]_B$.

Stop 1; pills a convenient bases and mite of on that ban's - Is usually the conomical bases

We pille E = (e, ez)



$$\frac{1}{3} + \frac{1}{3} = \frac{1}{3}$$

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$$\frac{1}{3}$$