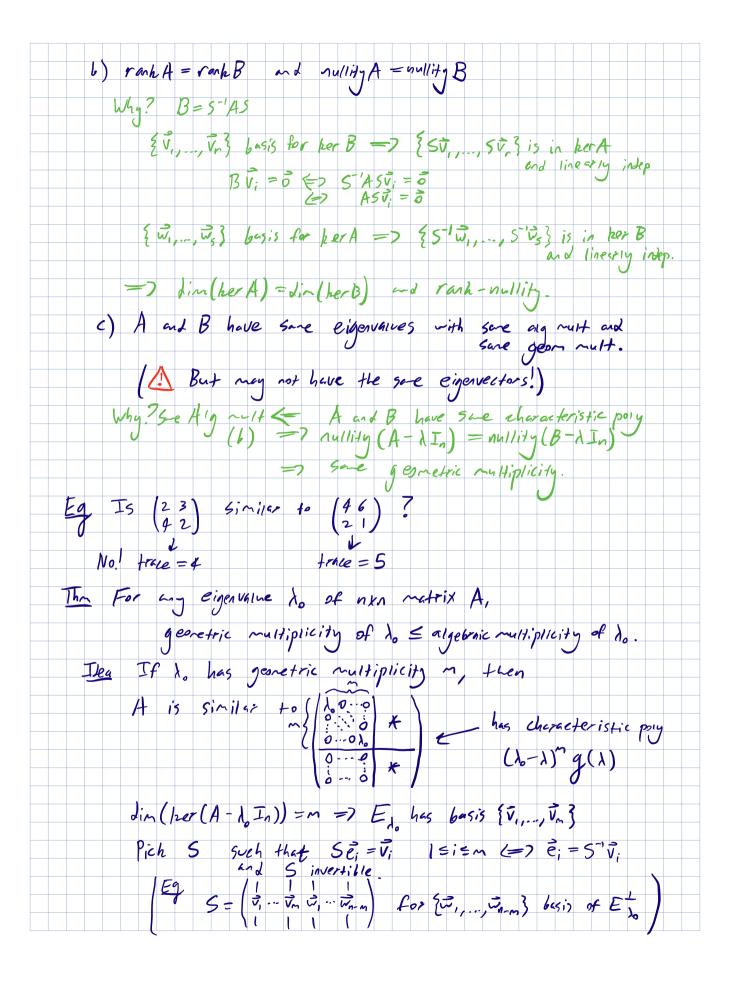
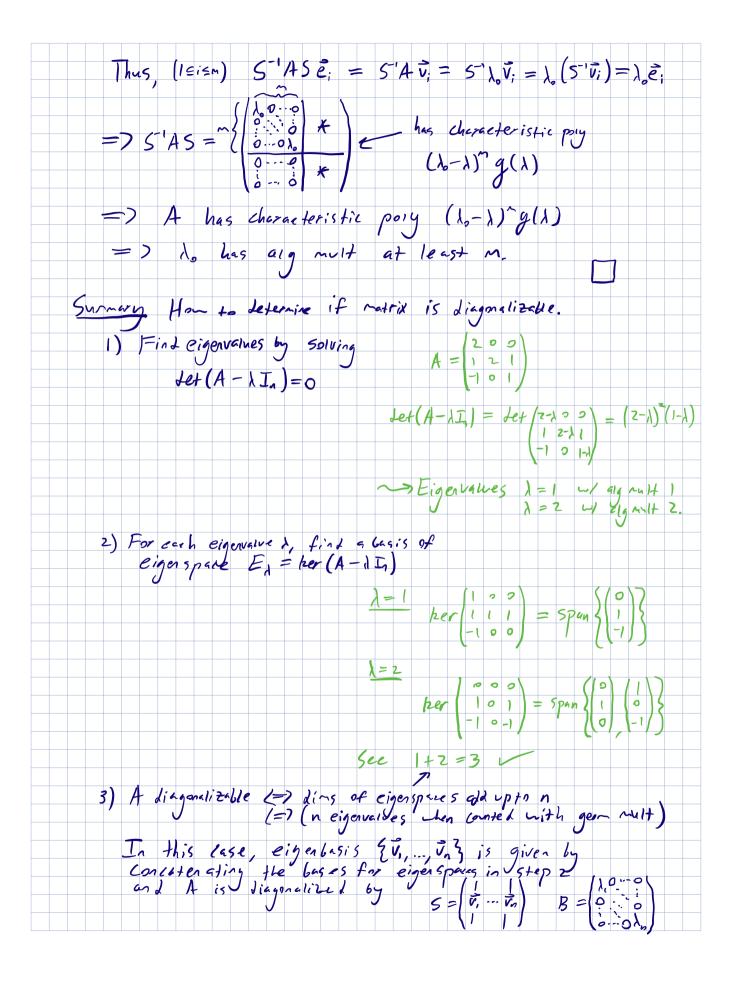
Written HW 10 (Lue 4/8) 7.1:4,6,12,16,18 7.2:8, 12, 18, 38 7.3:8,10,24  $A\vec{v} = \lambda \vec{v}$   $\vec{v}$  an eigenvector  $\vec{v}$  its corresponding eigenvalue Eigenvectors are restaled Ubut stoy on some Ex = { all eigenvectors of A with eigenvalue 130803  $= \text{Rer}(A - \lambda \overline{I}_n)$ dim E = geometric multiplicity of A Last time non metric A is diagonalizable Counted With geometric nultiplicity  $\frac{Eq}{3} A = \begin{pmatrix} 9 & 1 & 1 \\ 1 & 0 & 1 \end{pmatrix}$   $has \lambda = 2 \quad \text{geone fric mult 1}$   $\lambda = -1 \quad \text{geonefric mult 2}$   $\begin{pmatrix} 1 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}$   $So \quad \text{din } E_2 + \text{din } E_7 = 1 + 2 = 3$ So A is Jingonalizable. The If own matrix A has n histinet eigenvalues, then A is diagonalizable because din Ext din Ext ... + din Ext + ... + din Ext Eigenvalues and Similarity The For Similar nxn matrices A and B a) A and B have the Same Characteristic popynomial So, Let A = Jet B and trA = trB. Why? Because Let distributes multiplicatively 





Uhy diagonalization?

A is diagonalizable with 
$$B = \begin{pmatrix} 1 & 0 & 0 \\ 1 & 1 & 0 \end{pmatrix}$$

$$det A = 1, ... 1, \qquad det B = 1, ... 1, \qquad det$$