

Name: Solutions

Find the eigenvalues and corresponding eigenspaces of the matrix

$$A = \begin{pmatrix} 1 & 2 & 3 \\ 0 & 1 & 2 \\ 0 & 0 & 1 \end{pmatrix}.$$

$$\lambda_1 = \lambda_2 = \lambda_3 = 1.$$

$$\lambda = 1:$$

$$A - \lambda I = \begin{pmatrix} 0 & 2 & 3 \\ 0 & 0 & 2 \\ 0 & 0 & 0 \end{pmatrix}$$

$$\Rightarrow \vec{x} = \begin{pmatrix} \alpha \\ 0 \\ 0 \end{pmatrix}.$$