QUIZ 8 / LYELL READ / 5/20

$A = \begin{pmatrix} 2 & 3 \\ 3 & 2 \end{pmatrix}$. find Eigenvalues.

1] solve ~~A~~ $\det(A - \lambda I) = 0$

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

$$\det\begin{pmatrix} 2-\lambda & 3 \\ 3 & 2-\lambda \end{pmatrix} = 0 \qquad ad - bc$$

$(2-\lambda)^2 - 9 = 0$

$\lambda = 5, -1$

$\boxed{\lambda_1 = \lambda_2 = -2}$