

- 1, Using cofactor expansions, combined with elementary row and column operations when this is useful, to evaluate the determinant of the matrix (P326 Problem 5)

$$\begin{pmatrix} -5 & 0 & 1 & 6 \\ 2 & -1 & 3 & 7 \\ 4 & 4 & -5 & -8 \\ 1 & -1 & 6 & 2 \end{pmatrix}$$

- 2, Produce a matrix that diagonalizes the given matrix or show that this matrix is not diagonalizable (P353 Problem 5 & Problem 7)

(a) $\begin{pmatrix} 5 & 0 & 0 \\ 1 & 0 & 3 \\ 0 & 0 & -2 \end{pmatrix}$

(b) $\begin{pmatrix} -2 & 0 & 1 \\ 1 & 1 & 0 \\ 0 & 0 & -2 \end{pmatrix}$