Matrix Operations

- Transpose, sum & difference, scalar multiplication
- matrix multiplication, matrix-vector product
- matrix inverse
- Eigenvalue, Eigenvector

Matrix Addition

a) $\begin{bmatrix} 4 & -3 & 1 \\ 0 & 5 & -2 \\ 5 & -6 & 0 \end{bmatrix} + \begin{bmatrix} -1 & 2 & 3 \\ 6 & -7 & 9 \\ 0 & -4 & 8 \end{bmatrix}$

b) Transpose $\begin{bmatrix} 3 & 1 & -1 \\ 2 & 0 & 3 \end{bmatrix}$

c) $5 X \begin{bmatrix} -1 & 2 & 3 \\ 6 & -7 & 9 \\ 0 & -4 & 8 \end{bmatrix}$

d) $\begin{bmatrix} 10 & 5 & 8 & 3 \end{bmatrix} \begin{bmatrix} 12,500 \\ 11,800 \\ 15,900 \\ 25,300 \end{bmatrix} =$

e) $\begin{bmatrix} 3 & 1 & -1 \\ 2 & 0 & 3 \end{bmatrix} X \begin{bmatrix} 1 & 6 \\ 3 & -5 \\ -2 & 4 \end{bmatrix}$

f) $\begin{bmatrix} 1 & 0.5 \\ 0.5 & 1 \end{bmatrix}$ Eigenvalue=?
Eigenvector=?

g) $\begin{bmatrix} 4 & 8 \\ 1 & 3 \end{bmatrix}$ Inverse=?