

For this problem set, I will accept submissions with one name only.

Please work the following problems by hand. Check your work with Matlab.

Given:

$\underline{\underline{\mathbf{A}}} =$ $\begin{bmatrix} 2 & -5 & 3 & 1 \\ 3 & 2 & -2 & -1 \\ -3 & 1 & 1 & 3 \end{bmatrix}$	$\underline{\underline{\mathbf{B}}} =$ $\begin{bmatrix} 1 & 3 & 2 \\ -2 & 3 & 4 \end{bmatrix}$	$\underline{\underline{\mathbf{C}}} =$ $\begin{bmatrix} 2 & -4 \\ 1 & 3 \end{bmatrix}$	$\underline{\underline{\mathbf{D}}} =$ $\begin{bmatrix} 3 & 0 \\ 0 & 2 \end{bmatrix}$
$\underline{\underline{\mathbf{x}}} =$ $\begin{bmatrix} 1 & -1 & 2 & 3 \end{bmatrix}$	$\underline{\underline{\mathbf{y}}} =$ $\begin{bmatrix} 2 & 3 & -1 \end{bmatrix}$	$\underline{\underline{\mathbf{z}}} =$ $\begin{bmatrix} 3 & 1 \end{bmatrix}$	

Compute:

- (1)  $\underline{\underline{\mathbf{A}}} \underline{\underline{\mathbf{x}}}^T$
- (2)  $\underline{\underline{\mathbf{A}}}^T \underline{\underline{\mathbf{B}}}$
- (3)  $\underline{\underline{\mathbf{C}}} \underline{\underline{\mathbf{z}}}^T$
- (4)  $\underline{\underline{\mathbf{D}}} \underline{\underline{\mathbf{B}}} \underline{\underline{\mathbf{y}}}^T$
- (5)  $\underline{\underline{\mathbf{z}}} \underline{\underline{\mathbf{C}}}$
- (6)  $\underline{\underline{\mathbf{C}}} \underline{\underline{\mathbf{q}}} = \underline{\underline{\mathbf{z}}}^T$  (solve for  $\underline{\underline{\mathbf{q}}}$ )