

Directions:

1. Write your name with one character in each box below.
2. Show all work. No credit for answers without work.

1. [4 parts, 1 point each] Compute the following matrices if defined.

$$A = \begin{bmatrix} 1 & -1 \\ 2 & 4 \end{bmatrix} \quad B = \begin{bmatrix} 2 & 0 \\ 0 & 3 \\ 1 & -3 \end{bmatrix} \quad C = \begin{bmatrix} 3 & -2 \\ 1 & 5 \end{bmatrix} \quad D = \begin{bmatrix} -1 & 2 & 5 \end{bmatrix}$$

(a) $A + 2C$

(c) DD^T

(b) BC

(d) $D^T D$

2. [6 points] Solve the following system.

$$\begin{array}{rrcrcl} -3x_1 & + & 4x_2 & - & 4x_3 & = & 1 \\ -11x_1 & + & 16x_2 & - & 15x_3 & = & 2 \\ -x_1 & + & x_2 & - & x_3 & = & 3 \end{array}$$