

Name: _____

Score: _____

Directions: Please answer in the space provided. No calculators. Please put all phones, etc., away.

1. For this problem, $A = \begin{bmatrix} 3 & 1 & -5 \\ 4 & 2 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 1 \\ 0 & 1 \end{bmatrix}$, $C = \begin{bmatrix} -2 \\ 4 \end{bmatrix}$, and $D = [4 \ -1 \ -1]$.

Perform the indicated operations or state that they are not possible.

(a) $AD^T =$

(b) $AD^T - 2C =$

(c) $B^2 =$

(d) $B^2 - 2B + I_2 =$

2. Suppose $\begin{bmatrix} w & x \\ y & z \end{bmatrix} \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} = \begin{bmatrix} 1 & 4 \\ 0 & 2 \end{bmatrix}$. Find $\begin{bmatrix} w & x \\ y & z \end{bmatrix}$.