Number: Textbook Section:
Title:

Def: A matrix is

1. Let $A = \begin{bmatrix} 2 & -1 & 5 \\ 4 & 7 & 3 \end{bmatrix}$.

**a)** Give the dimension of $A$.

**b)** Find $3A$.

2. Let $A = \begin{bmatrix} 4 & 6 \\ 1 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 5 \\ 3 & 7 \end{bmatrix}$, $C = \begin{bmatrix} 2 & 3 \\ 1 & 0 \\ 0 & 2 \end{bmatrix}$, and $D = \begin{bmatrix} 10 & 20 \\ 30 & 20 \\ 10 & 0 \end{bmatrix}$.

Perform the indicated operations, if possible.

**a)** $2A - 3B$

**b)** $C + D$

**c)** $A + C$

3. Solve the matrix equation $2A = B - 3X$ for $X$, using $A$ and $B$ as defined in #2.

*For #4 and 5, solve for x and y.*

4. $\begin{bmatrix} x & y \\ -y & x \end{bmatrix} - \begin{bmatrix} y & x \\ x & -y \end{bmatrix} = \begin{bmatrix} 4 & -4 \\ -6 & 6 \end{bmatrix}$

5. $\begin{bmatrix} x-3y \\ 2x+y \end{bmatrix} = \begin{bmatrix} 1 \\ -5 \end{bmatrix}$