

Matrix Operations Warm-up

1. Name the dimensions of each matrix.

$$A = \begin{bmatrix} -1 & 3 & 5 \\ 8 & -2 & 1 \end{bmatrix} \quad \boxed{2 \times 3}$$

$$B = \begin{bmatrix} -4 \\ 3 \\ 2 \\ 1 \end{bmatrix} \quad \boxed{4 \times 1}$$

What element is in the second row, third column of matrix A? 1

2.
$$3 \begin{bmatrix} -2 & 1 \\ 5 & 0 \\ 3 & -4 \end{bmatrix} - \frac{1}{2} \begin{bmatrix} -4 & 8 \\ 6 & 0 \\ -6 & 10 \end{bmatrix} =$$

$$\begin{bmatrix} -6 & 3 \\ 15 & 0 \\ 9 & -12 \end{bmatrix} + \begin{bmatrix} 2 & -4 \\ -3 & 0 \\ 3 & -5 \end{bmatrix} = \begin{bmatrix} -4 & -1 \\ 12 & 0 \\ 12 & -17 \end{bmatrix}$$

3. Solve for x and y.

$$\begin{bmatrix} 3x & -2 \\ -1 & 8 \end{bmatrix} + \begin{bmatrix} -4 & 0 \\ -7 & -8 \end{bmatrix} = \begin{bmatrix} -16 & -2 \\ y & 0 \end{bmatrix}$$

$$3x - 4 = -16$$

$$3x = -12$$

$$\boxed{x = -4}$$

$$-1 + -7 = y$$

$$\boxed{-8 = y}$$