Notes 10.2 Matrix Translations

Given ΔABC with vertices at $A(3,6)$, $B(-1,4)$, $C(0,-2)$
ΔABC can be written as a matrix as shown here:

$$\begin{bmatrix} 3 & -1 & 0 \\ 6 & 4 & -2 \end{bmatrix}$$

To better understand how each number was placed
Here is the matrix with labels:

$$\begin{array}{c} \\ x \\ y \end{array} \begin{array}{c} \begin{array}{ccc} A & B & C \end{array} \\ \begin{bmatrix} 3 & -1 & 0 \\ 6 & 4 & -2 \end{bmatrix} \end{array}$$

A matrix rule for a translation would be written as so:

Translate: 5 units left and 3 units up

This would give the new matrix for $\Delta A'B'C'$

$$\begin{bmatrix} -2 & -6 & -5 \\ 9 & 7 & 1 \end{bmatrix}$$

To better understand how each number was placed
Here is the matrix with labels:

$$\begin{array}{c} \\ x \\ y \end{array} \begin{array}{c} \begin{array}{ccc} A' & B' & C' \end{array} \\ \begin{bmatrix} 3 & -1 & 0 \\ 6 & 4 & -2 \end{bmatrix} \end{array}$$