To add or subtract matrices of m x n order, we simply combine matching terms.

* Two matrices of different order cannot be added or subtracted. undefined *

\[ A + B = B + A \]
\[ (A + B) + C = A + (B + C) \]
\[ A + 0 = 0 + A = A \]
\[ A + (-A) = (-A + A) = 0 \]

Properties of Matrix Addition:
If A, B, and C are m x n matrices and 0 is the m x n zero matrix:

A matrix that is a 1 x 1 is referred to as a scalar. We will refer to real #s as scalars.

To multiply a matrix by a scalar we simply multiply each term of that matrix by the scalar (real #).

\[ A = \begin{bmatrix} -1 & 4 \\ 3 & 0 \end{bmatrix} \quad B = \begin{bmatrix} 2 & -3 \\ 5 & -6 \end{bmatrix} \quad \text{Find} \ -5B \]
\[ 2A + 3B \]