

## 1 Add Vectors

$$\vec{u} + \vec{v} = \begin{bmatrix} u_1 \\ u_2 \\ \dots \\ u_n \end{bmatrix} + \begin{bmatrix} v_1 \\ v_2 \\ \dots \\ v_n \end{bmatrix} = \begin{bmatrix} u_1 + v_1 \\ u_2 + v_2 \\ \dots \\ u_n + v_n \end{bmatrix}$$

## 2 Subtract Vectors

$$\vec{u} - \vec{v} = \begin{bmatrix} u_1 \\ u_2 \\ \dots \\ u_n \end{bmatrix} - \begin{bmatrix} v_1 \\ v_2 \\ \dots \\ v_n \end{bmatrix} = \begin{bmatrix} u_1 - v_1 \\ u_2 - v_2 \\ \dots \\ u_n - v_n \end{bmatrix}$$

## 3 Scale Vector

$$k\vec{u} = k \begin{bmatrix} u_1 \\ u_2 \\ \dots \\ u_n \end{bmatrix} = \begin{bmatrix} ku_1 \\ ku_2 \\ \dots \\ ku_n \end{bmatrix}$$