§1.3
Example (a)
\[
\begin{bmatrix}
3 \\
-1
\end{bmatrix}
+ \begin{bmatrix}
2 \\
5
\end{bmatrix} = 
\]

Example (b)
\[
3 \cdot \begin{bmatrix}
2 \\
5 \\
1.1
\end{bmatrix} = \begin{bmatrix}
3 \times 2 \\
3 \times 5 \\
3 \times 1.1
\end{bmatrix} = 
\]

Example (c)
\[
3 \cdot \begin{bmatrix}
3 \\
-1
\end{bmatrix} + 2 \cdot \begin{bmatrix}
-2 \\
5
\end{bmatrix} = 
\]

§1.4
Example (Multiplication of a Matrix and a Vector)
\[
A\vec{x} = \begin{bmatrix}
-5 & -5 & -3 \\
0 & -4 & -4 \\
1 & 1 & 4
\end{bmatrix} \begin{bmatrix}
-1 \\
2 \\
-3
\end{bmatrix}
\]

§1.5
Example
\[
A = \begin{bmatrix}
3 & 5 & -4 & 4 \\
-3 & -2 & 4 & 2 \\
6 & 1 & -8 & -10
\end{bmatrix}, \quad \vec{b} = \begin{bmatrix}
1 \\
5 \\
-16
\end{bmatrix}.
\]

Question 1: Solve the homogeneous system \(A\vec{x} = \vec{0}\).

Question 2: Solve the non-homogeneous system \(A\vec{x} = \vec{b}\).