1. #14, §1.1, p.11 : Solve 
\[ x_1 - 3x_2 = 5 \]
\[ -x_1 + x_2 + 5x_3 = 2 \]
\[ x_2 + x_3 = 0 \]

2. #18, §1.1, p.11 : Do the planes \( x_1 + 2x_2 + x_3 = 4 \), \( x_2 - x_3 = 1 \), and \( x_1 + 3x_2 = 0 \) have at least one common point of intersection? Explain.

3. #20, §1.2, p.26 : Find \( h \) and \( k \) such that 
\[ x_1 + 3x_2 = 2 \]
\[ 3x_1 + hx_2 = k \]
(a) has no solutions, (b) has a unique solution, (c) has many solutions.

4. #12, §1.3, p.38 : Given \( a_1 = \begin{pmatrix} 1 \\ -2 \\ 0 \end{pmatrix} \), \( a_2 = \begin{pmatrix} 0 \\ 5 \\ 5 \end{pmatrix} \), \( a_3 = \begin{pmatrix} 2 \\ 0 \\ 8 \end{pmatrix} \) and \( b = \begin{pmatrix} -5 \\ 1 \\ -7 \end{pmatrix} \), determine if \( b \) is a linear combination of \( a_1 \), \( a_2 \), and \( a_3 \).

5. #18, §1.3, p.38 : Let \( v_1 = \begin{pmatrix} 1 \\ 0 \\ -2 \end{pmatrix} \), \( v_2 = \begin{pmatrix} -3 \\ 1 \\ 8 \end{pmatrix} \), and \( y = \begin{pmatrix} h \\ -5 \\ -3 \end{pmatrix} \). For what value(s) of \( h \) is \( y \) in the plane spanned by \( v_1 \) and \( v_2 \).