1. Consider the following system of linear equations

\[2x_1 + 2x_2 = 10\]
\[-x_1 + 3x_2 = 3\]

(a) Verify that \(x_1 = 3\) and \(x_2 = 2\) is a solution to the above system of equations.

(b) Verify the above solution geometrically by plotting (on a plot similar to that shown below) the two lines and showing that their intersection is the point \((3, 2)\).
2. Consider the following system of linear equations

\[ 3x + 2y = 14 \]
\[ x + 2y = 6 \]

(a) Solve for \( x \) and \( y \) (show your work).

(b) Verify your solution geometrically by plotting (on a plot similar to that shown below) the two lines and their intersection.
3. Consider the following system of linear equations

\[ 4x - y = 2 \]
\[ x + 2y = 5 \]

(a) Solve for \( x \) and \( y \) (show your work).

(b) Verify your solution geometrically by plotting (on a plot similar to that shown below) the two lines and their intersection.