Let $\mathbf{u} = (2, 1, 1)$ and $\mathbf{v} = (5, 1, -2)$

1. (a) Does $\mathbf{b} = (-14, -1, 11)$ lie in $\text{Span}\{\mathbf{u}, \mathbf{v}\}$?

   (b) What does this tell you about the lines $2x + 5y = -14$, $x + y = -1$, and $x - 2y = 11$?

2. (a) Does $\mathbf{b} = (13, 8, -42)$ lie in $\text{Span}\{\mathbf{u}, \mathbf{v}\}$?

   (b) What does this tell you about the lines $2x + 5y = 13$, $x + y = 8$, and $x - 2y = -42$?

3. Give a geometric description of $\text{Span}\{\mathbf{u}, \mathbf{v}\}$.