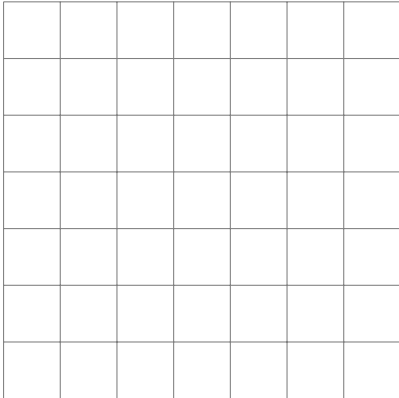


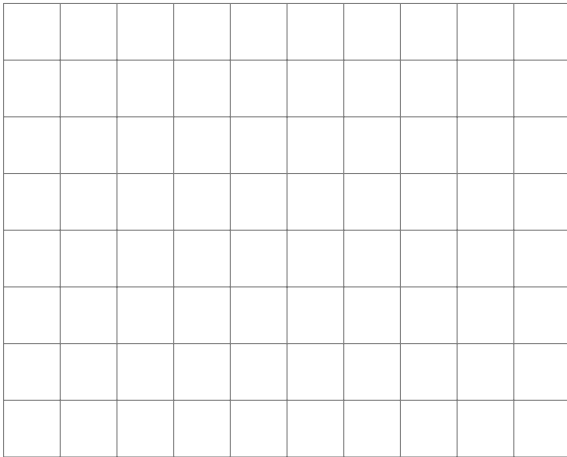
1. Find a vector  $\mathbf{v}$  such that the line  $-7x + 3y = 0$  lies along  $\mathbf{v}$ .

2. Find the angle between  $\begin{pmatrix} 3 \\ 3 \end{pmatrix}$  and  $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$  using the formula learned in class. Sketch!



3. Find all  $x$  such that the vectors  $\begin{pmatrix} x \\ 1 \end{pmatrix}$  and  $\begin{pmatrix} 9 \\ x \end{pmatrix}$  are linearly dependent.

4. Find a formula for the projection onto the line in the direction of  $\begin{pmatrix} 4 \\ -1 \end{pmatrix}$ . Sketch an example.



5. You are given that the projection onto the line in the direction of  $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$  is  $\begin{pmatrix} (9x - 6y)/13 \\ (-6x + 4y)/13 \end{pmatrix}$ . Find the reflection about this line. Simplify the algebra!