Math 10460 - Honors Mathematics II
Homework 9c - Due Wednesday, March 23

You must show your work in all of the problems!!!

(8) Write down a matrix which gives a reflection about the line $-x + 2y = 3$.

(9) Write down a matrix which dialates the plane by a factor of 4 at the point $(5, -9)$.

(10) Write down a 2×2-matrix which stretches the plane by a factor of 4 in the $\hat{i}$-direction and shrinks the plane by a factor of 3 in the $\hat{j}$-direction.

(11) Write down a 2×2-matrix which stretches the plane by a factor of 2 in the direction of $\vec{v} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ and flips and stretches the plane by a factor of 2 in the direction of $\vec{w} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$.