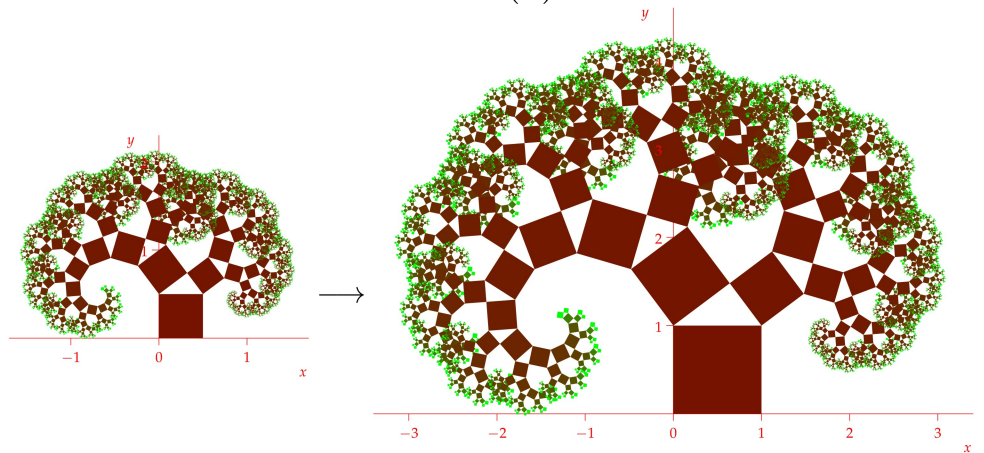
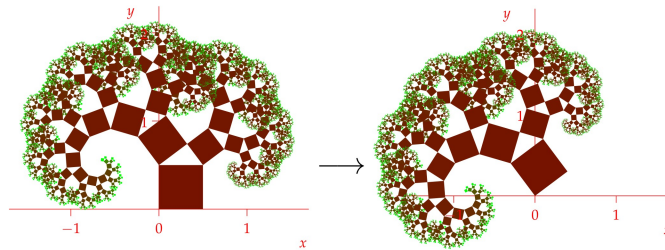


Examples of Linear Transformations $T(\mathbf{x}) = A\mathbf{x}$

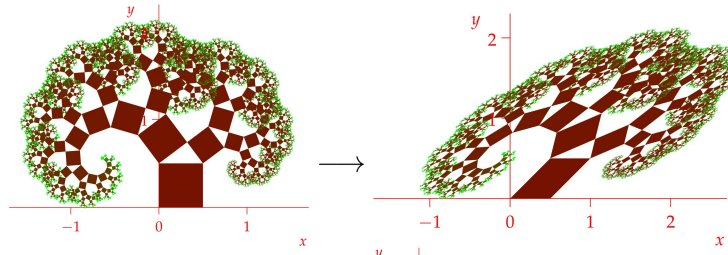
Dilation: $A = \begin{pmatrix} 2 & 0 \\ 0 & 2 \end{pmatrix}$



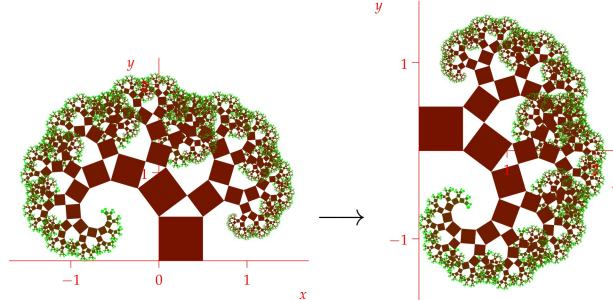
Rotation: $A = \begin{pmatrix} 4 & -3 \\ 3 & 5 \end{pmatrix}$



Shear: $A = \begin{pmatrix} 1 & 1 \\ 0 & 1 \end{pmatrix}$



Reflection: $A = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$



Projection: $A = \begin{pmatrix} \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \\ \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \end{pmatrix}$

