

Activity: Self-inverse matrices.

Show that each of these matrices is self-inverse.

$$\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \quad \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix} \quad \begin{pmatrix} \frac{1}{2} & \frac{1}{2} \\ \frac{3}{2} & \frac{-1}{2} \end{pmatrix}$$

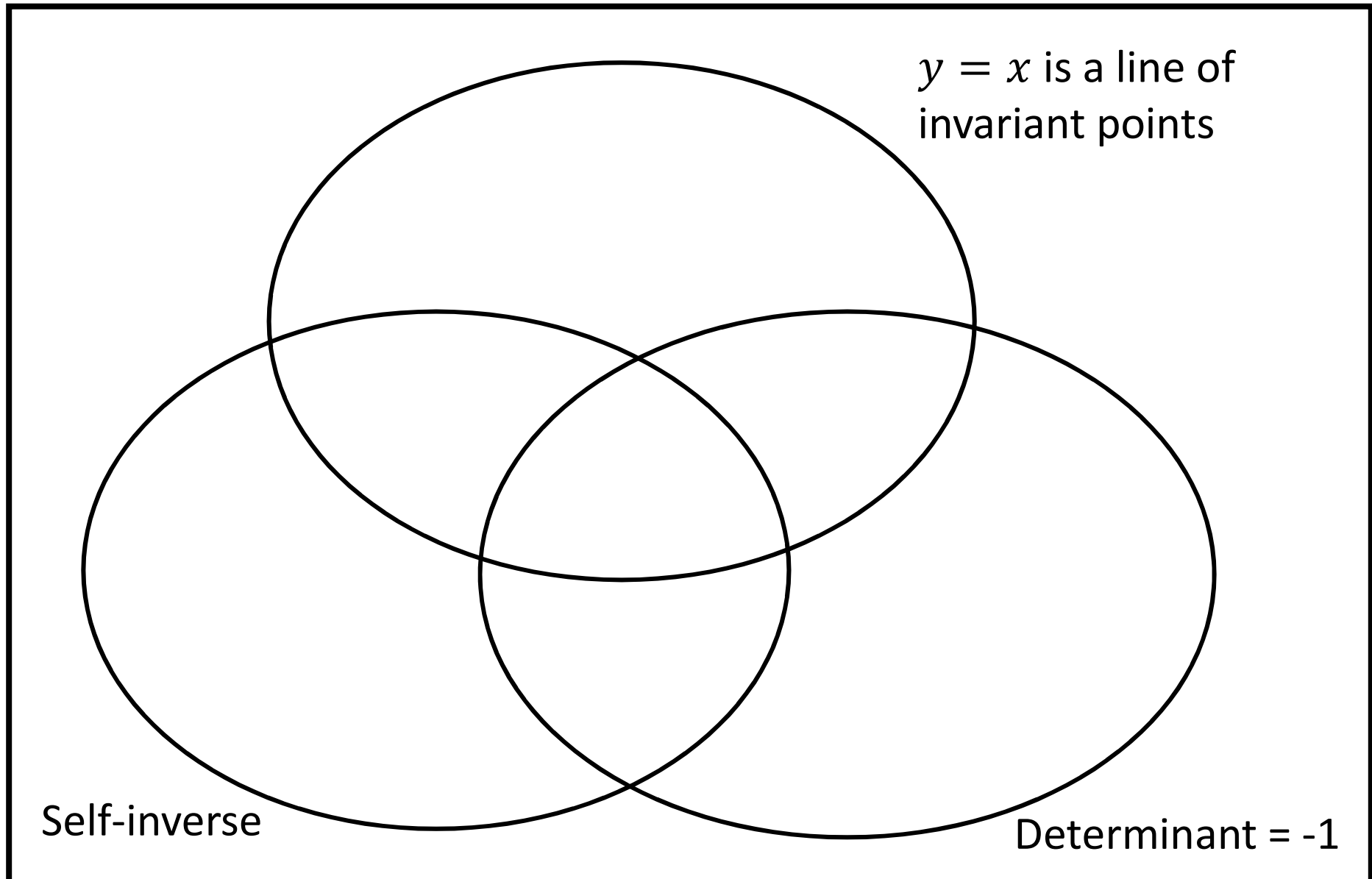
Can you explain these results geometrically?

Can you find other self-inverse matrices?

Can you generalise your results?

Prompt/Plenary:

Fill in the Venn Diagram:



$$\begin{pmatrix} -1 & 0 \\ 0 & -1 \end{pmatrix}$$

$$\begin{pmatrix} 4 & 3 \\ -5 & -4 \end{pmatrix}$$

$$\begin{pmatrix} 2 & 1 \\ 1 & 0 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 2 & -1 \\ 2 & -1 \end{pmatrix}$$

$$\begin{pmatrix} \frac{1}{4} & \frac{3}{4} \\ \frac{5}{4} & \frac{-1}{4} \end{pmatrix}$$

Prompt/Plenary:

Fill in the Venn Diagram:

