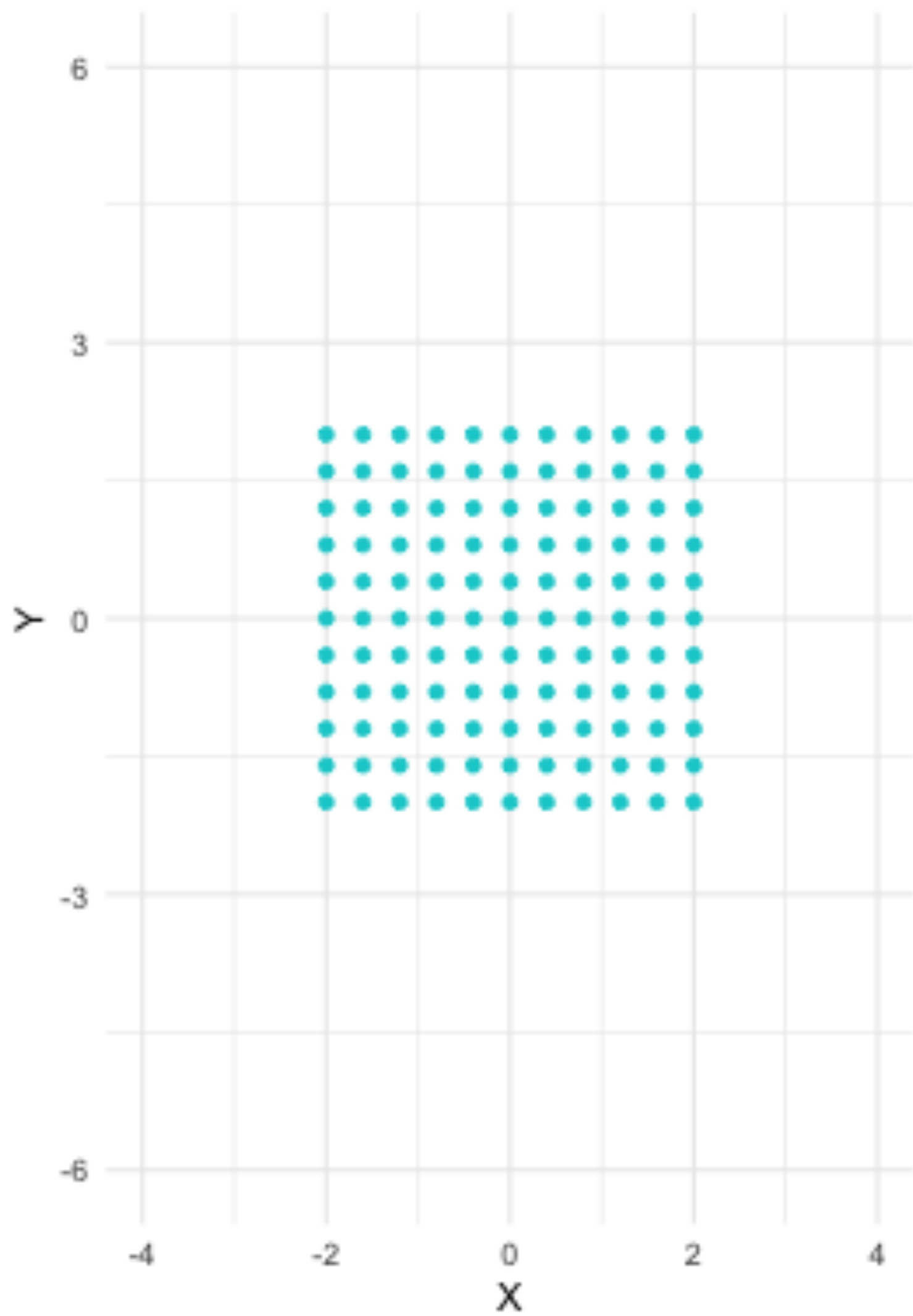
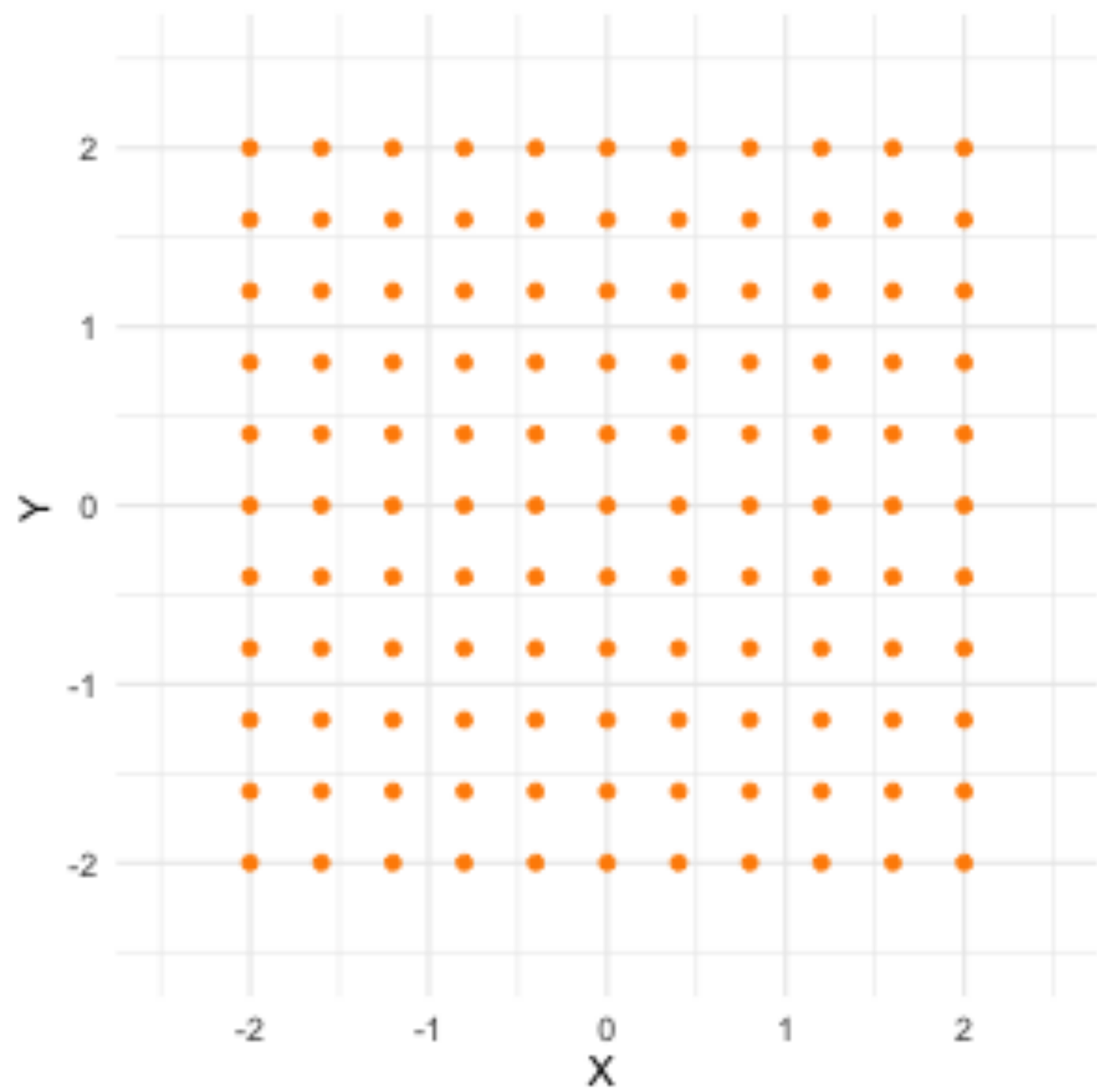
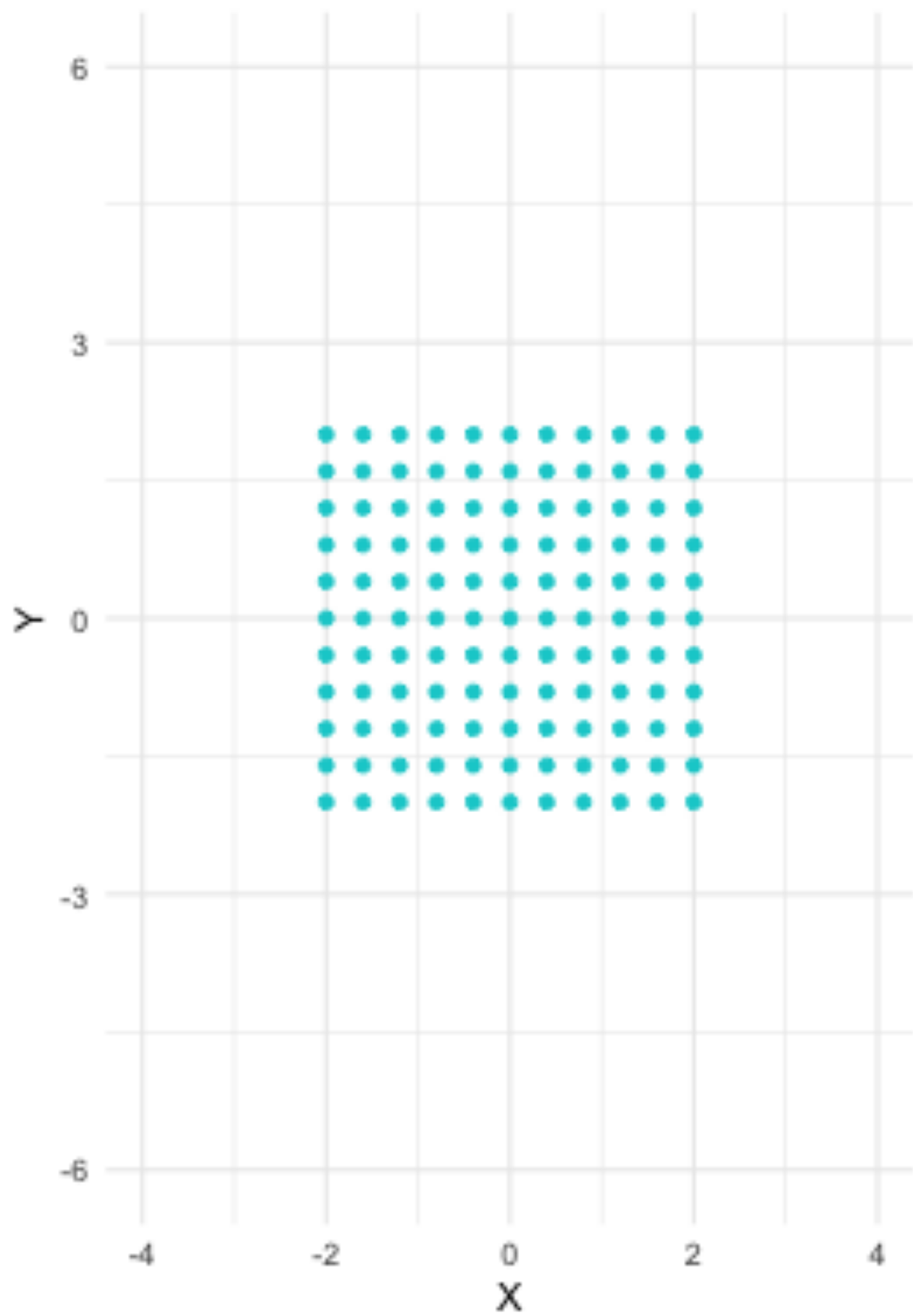
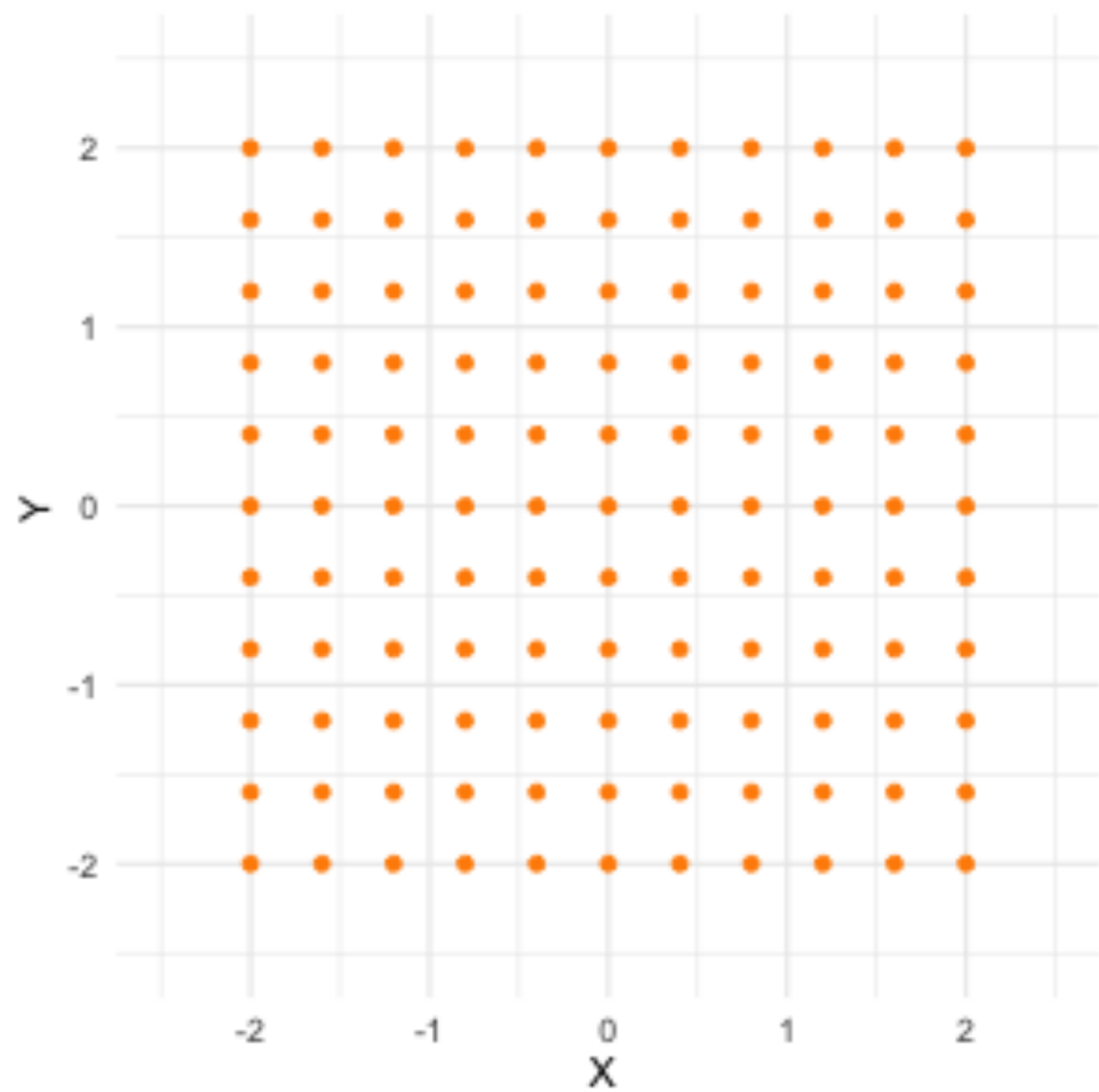


linear-linear transformation

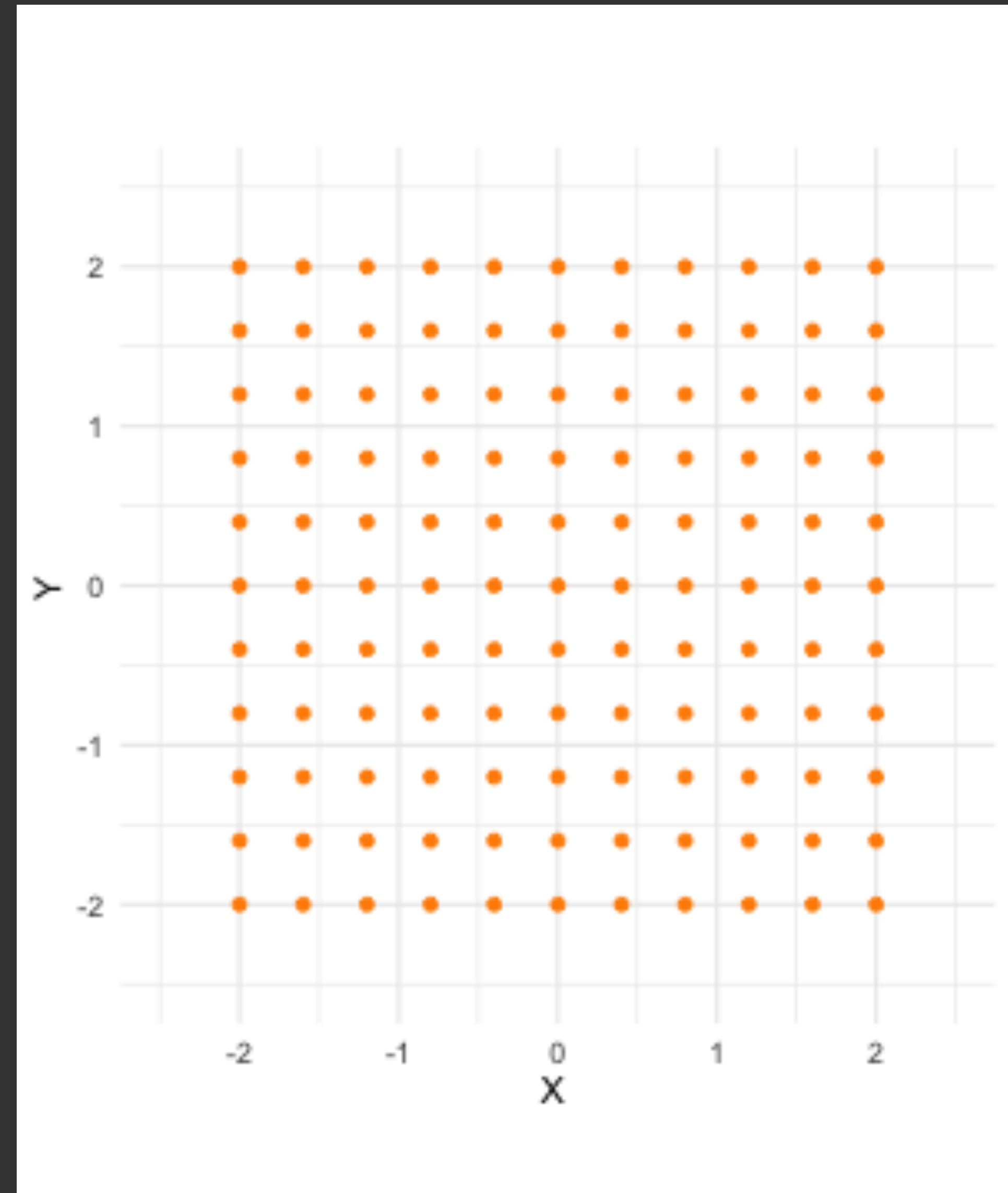
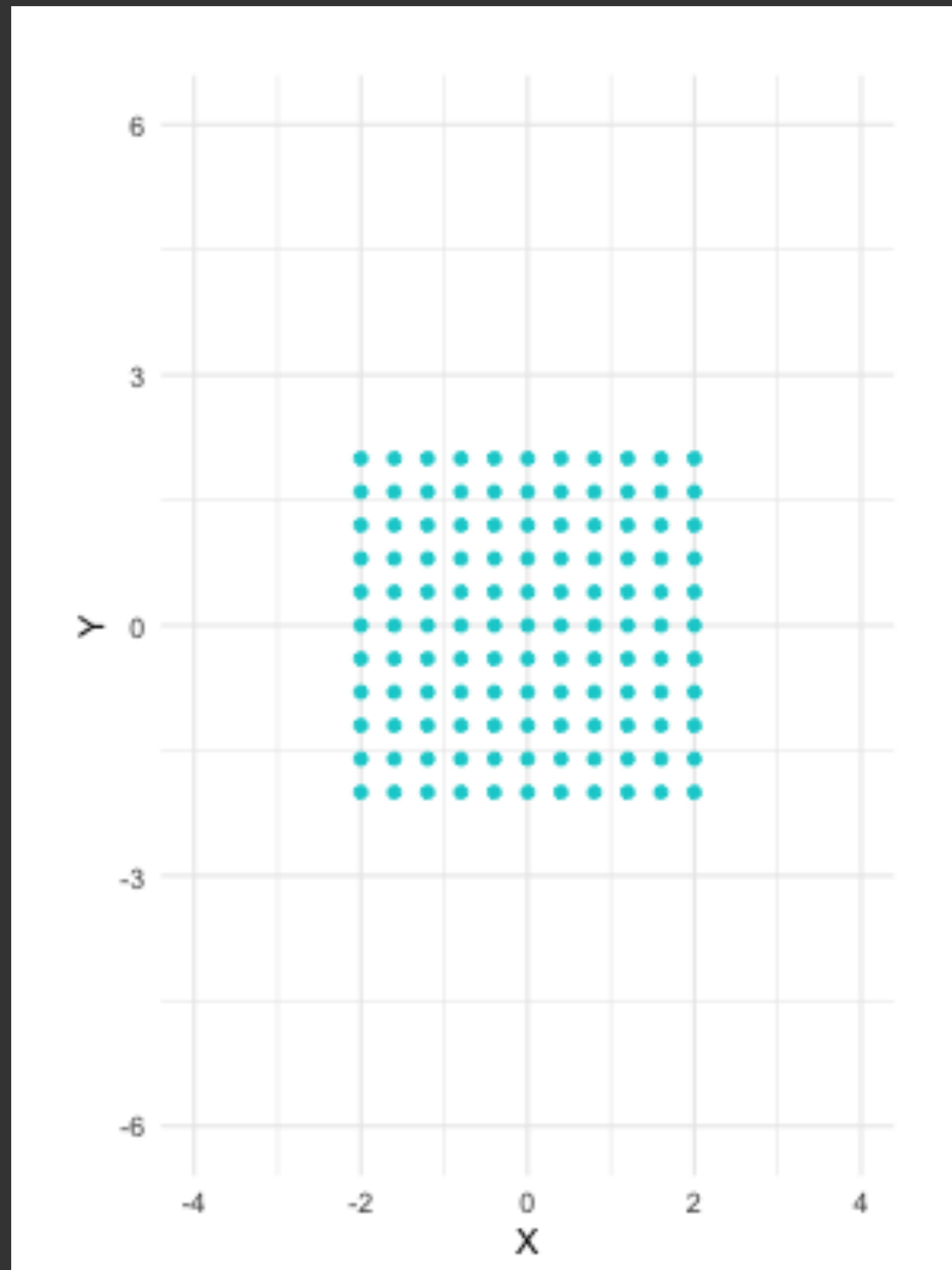








linear and non-linear transformation



linear and non-linear transformation

Linear:

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = A \cdot \begin{bmatrix} x \\ y \end{bmatrix} \text{ where } A = \begin{bmatrix} 1 & 1 \\ -1 & 2 \end{bmatrix}$$

Non-Linear:

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} f(x, y) \\ g(x, y) \end{bmatrix} = \begin{bmatrix} x + 0.5 \sin(y) \\ y + 0.5 \sin(x) \end{bmatrix}$$

but locally linear when we zoom in!

