EXERCISE 5.10: Show that the time-flip system $y[n] = x[-n]$ is a linear system.
Define \( \text{FLIP}\{x[n]\} = x[-n] \)

\[
\text{Scaling: } \quad \text{FLIP}\{ax[n]\} = ax[-n]
\]

That is, "doubling \(x[n]\)" will double its flipped version.

\[
\text{Additive: } \quad \text{FLIP}\{x_1[n] + x_2[n]\} = x_1[-n] + x_2[-n]
\]

\[
= \text{FLIP}\{x_1[n]\} + \text{FLIP}\{x_2[n]\}
\]