Domain and Range with Relations

Relation: A set of ordered pairs \((x, y)\). (A bunch of points.)

Domain: What “\(x\)” can be.

Range: What “\(y\)” can be.

Given relation \(\{(1, -2), (-4, 6), (-2, -3), (2, -1)\}\),

Domain = \(\{1, -4, -2, 2\} \leftarrow x\)-values

Range = \(\{-2, 6, -3, -1\} \leftarrow y\)-values

We also may be interested in the largest and smallest \(x\)- and \(y\)-values for various reasons. We refer to these as maximums and minimums.

\[
\begin{align*}
\text{Maximum of } x\text{-values} &= \\
\text{Minimum of } x\text{-values} &= \\
\text{Maximum of } y\text{-values} &= \\
\text{Minimum of } y\text{-values} &= 
\end{align*}
\]

Scatterplot: Plotting points in a relation.

Line Graph: Connecting points in a scatterplot from left to right.