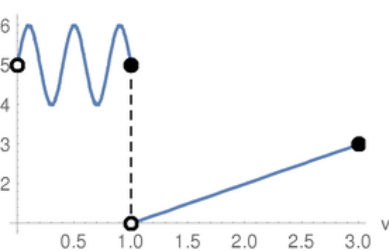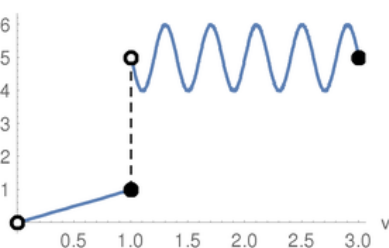# Piecewise Functions

To define piecewise means that the function values and graphs
are defined over a particular and generally limited
section of the v-axis

$$\begin{cases} \sin(5\pi v) + 5 & 0 < v \le 1 \\ v & 1 < v \le 3 \end{cases}$$

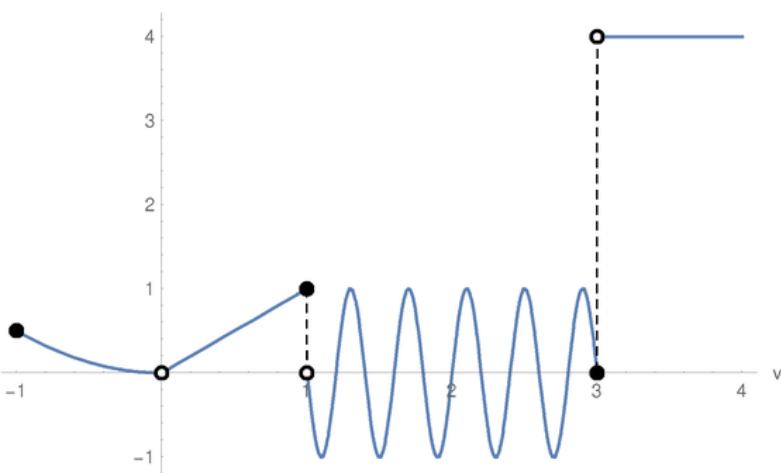

where two functions are stitched together, and for that matter
could be pieced differently i.e. swapped:

$$\begin{cases} v & 0 < v \le 1 \\ \sin(5\pi v) + 5 & 1 < v \le 3 \end{cases}$$

More and more complicated functions could be stitched together:

$$\begin{cases} \dfrac{v^2}{2} & -1 \le v \le 0 \\ v & 0 < v \le 1 \\ \sin(5\pi v) & 1 < v \le 3 \\ 4 & v > 3 \end{cases}$$

Solid disk corresponds to inclusion of the point or any of $\le \ge =$ operators

●

Hollow disk corresponds to the exclusion or any of the $<\ >$ operators

○