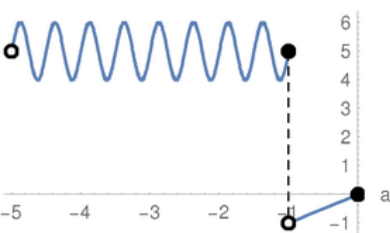


Piecewise Functions

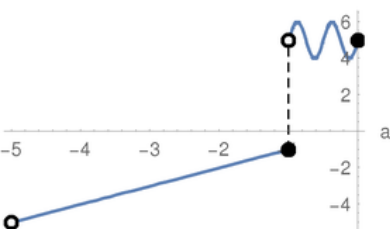
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the a-axis

$$\begin{cases} \sin(4\pi a) + 5 & -5 < a \leq -1 \\ a & -1 < a \leq 0 \end{cases}$$



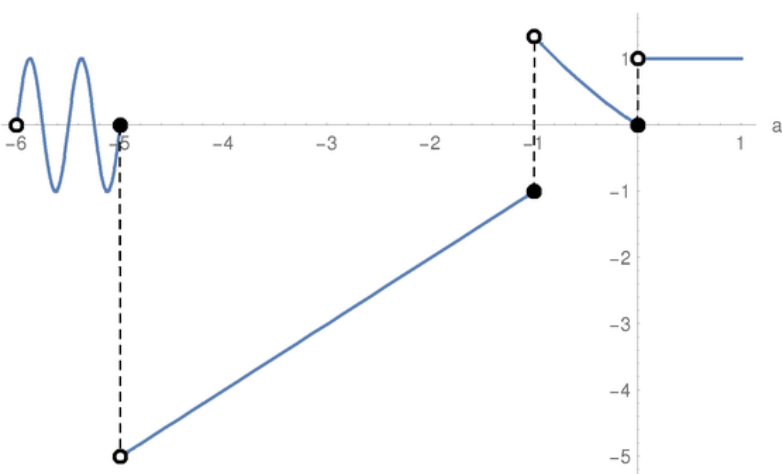
where two functions are stitched together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} a & -5 < a \leq -1 \\ \sin(4\pi a) + 5 & -1 < a \leq 0 \end{cases}$$



More and more complicated functions could be stitched together:

$$\begin{cases} \sin(4\pi a) & -6 < a \leq -5 \\ a & -5 < a \leq -1 \\ \frac{a^2}{3} - a & -1 < a \leq 0 \\ 1 & a > 0 \end{cases}$$



Solid disk corresponds to inclusion of the point or any of $\leq \geq =$ operators



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

