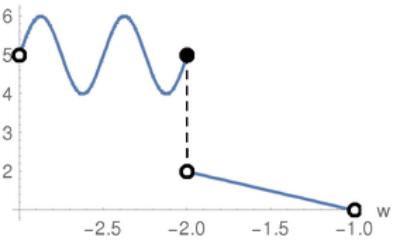
Piecewise Functions

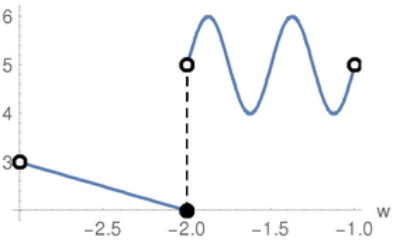
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the w-axis

$$\begin{cases} \sin(4\pi w) + 5 & -3 < w \leq -2 \\ -w & -2 < w < -1 \end{cases}$$



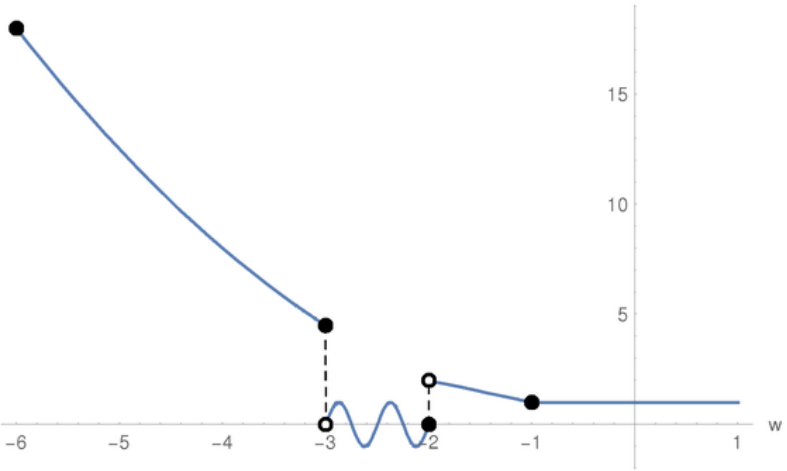
where two functions are stitched together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} -w & -3 < w \leq -2 \\ \sin(4\pi w) + 5 & -2 < w < -1 \end{cases}$$



More and more complicated functions could be stitched together:

$$\begin{cases} \frac{w^2}{2} & -6 \leq w \leq -3 \\ \sin(4\pi w) & -3 < w \leq -2 \\ -w & -2 < w < -1 \\ 1 & w \geq -1 \end{cases}$$



Solid disk corresponds to inclusion of the point or any of $\leqslant$ $\geqslant$ $=$ operators

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

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