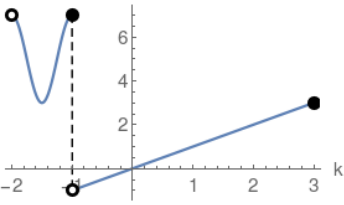
Piecewise Functions

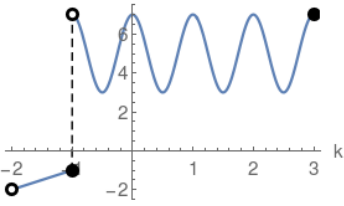
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the k-axis

$$\begin{cases} 2\cos(2\pi k) + 5 & -2 < k \leq -1 \\ k & -1 < k \leq 3 \end{cases}$$



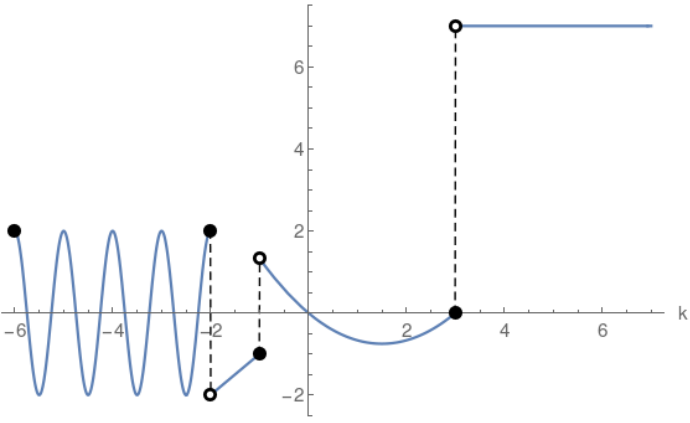
where two functions are stitched together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} k & -2 < k \leq -1 \\ 2\cos(2\pi k) + 5 & -1 < k \leq 3 \end{cases}$$



More and more complicated functions could be stitched together:

$$\begin{cases} 2\cos(2\pi k) & -6 \leq k \leq -2 \\ k & -2 < k \leq -1 \\ \frac{k^2}{3} - k & -1 < k \leq 3 \\ 7 & k > 3 \end{cases}$$



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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