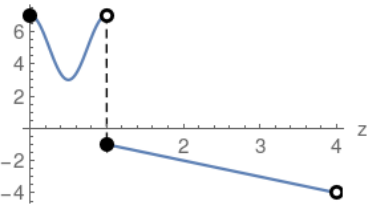
Piecewise Functions

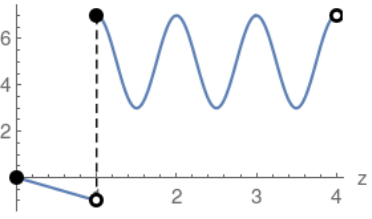
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the z-axis

$$\begin{cases} 2\cos(2\pi z) + 5 & 0 \le z < 1 \\ -z & 1 \le z < 4 \end{cases}$$



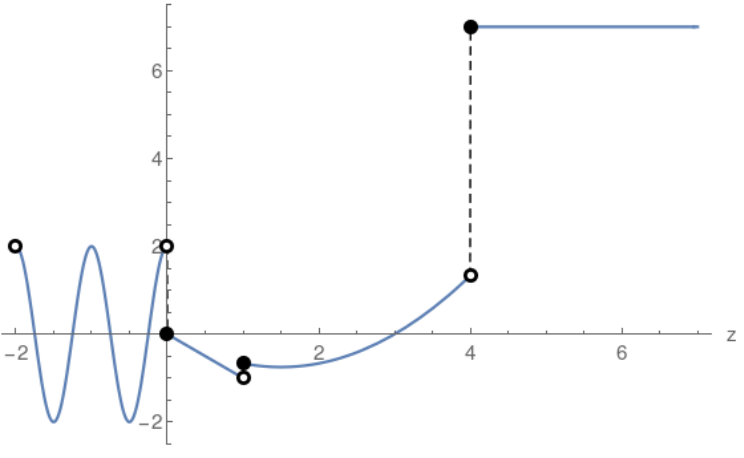
where two functions are stitched together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} -z & 0 \le z < 1 \\ 2\cos(2\pi z) + 5 & 1 \le z < 4 \end{cases}$$



More and more complicated functions could be stitched together:

$$\begin{cases} 2\cos(2\pi z) & -2 < z < 0 \\ -z & 0 \le z < 1 \\ \frac{z^2}{3} - z & 1 \le z < 4 \\ 7 & z \ge 4 \end{cases}$$



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

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

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