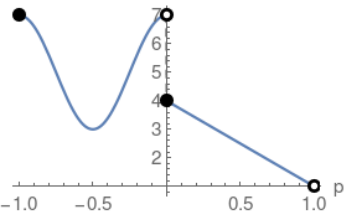
Piecewise Functions

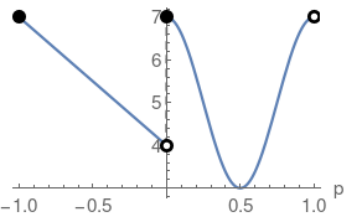
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the p-axis

$$\begin{cases} 2\cos(2\pi p) + 5 & -1 \le p < 0 \\ 4 - 3p & 0 \le p < 1 \end{cases}$$



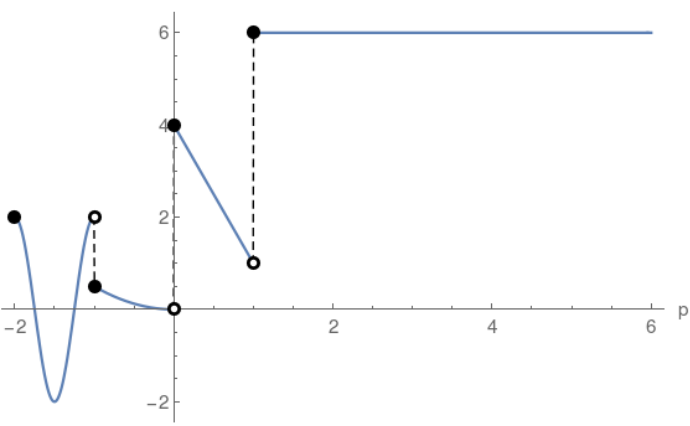
where two functions are pieced together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} 4 - 3p & -1 \le p < 0 \\ 2\cos(2\pi p) + 5 & 0 \le p < 1 \end{cases}$$



More and more complicated functions could be pieced together:

$$\begin{cases} 2\cos(2\pi p) & -2 \le p < -1 \\ \frac{p^2}{2} & -1 \le p < 0 \\ 4 - 3p & 0 \le p < 1 \\ 6 & p \ge 1 \end{cases}$$



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

●

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

○