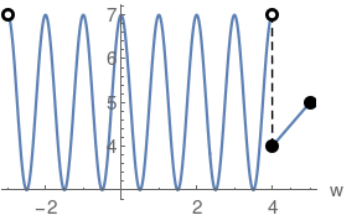
Piecewise Functions

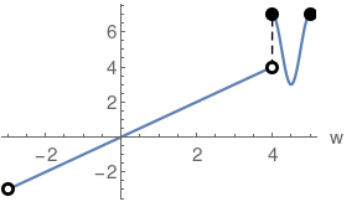
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the w-axis

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



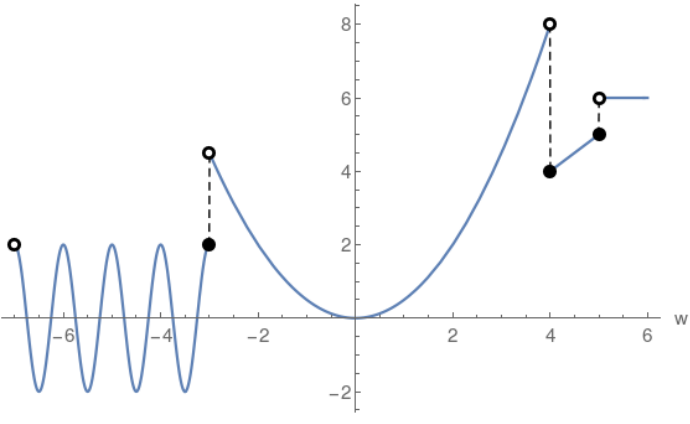
where two functions are juxtaposed together, and for that matter could be pieced differently i.e. swapped:

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



More and more complicated functions could be juxtaposed together:

$$\begin{cases} 2\cos(2\pi w) & -7 < w \le -3 \\ \frac{w^2}{2} & -3 < w < 4 \\ w & 4 \le w \le 5 \\ 6 & w > 5 \end{cases}$$



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

○