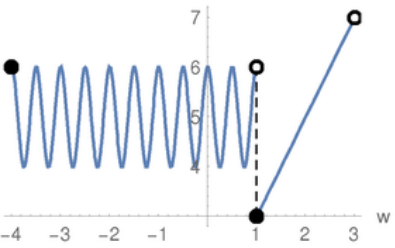
Piecewise Functions

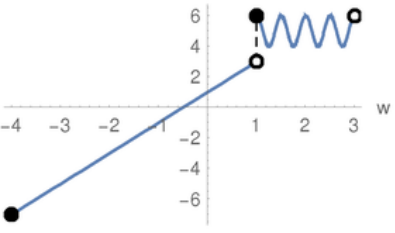
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the w-axis

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



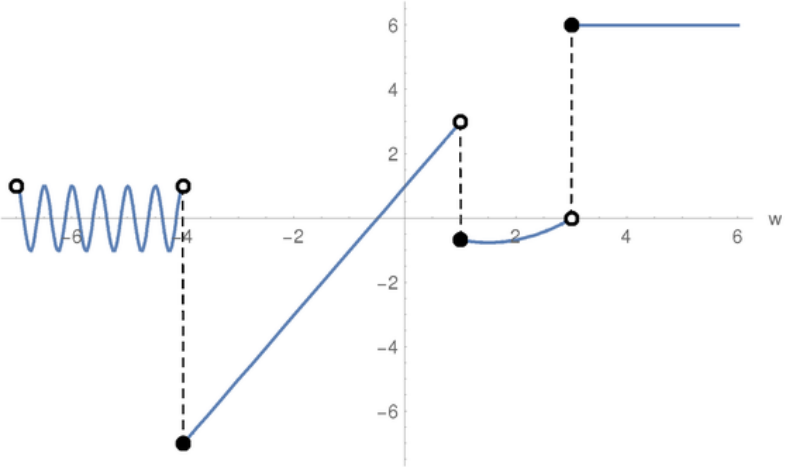
where two functions are pieced together, and for that matter could be pieced differently i.e. swapped:

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



More and more complicated functions could be pieced together:

$$\begin{cases} \cos(4\pi w) & -7 < w < -4 \\ 2w + 1 & -4 \le w < 1 \\ \frac{w^2}{3} - w & 1 \le w < 3 \\ 6 & w \ge 3 \end{cases}$$



Solid disk corresponds to inclusion of the point or any of ⩽ ⩾ = operators

●

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

○