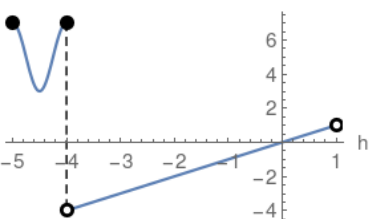# Piecewise Functions
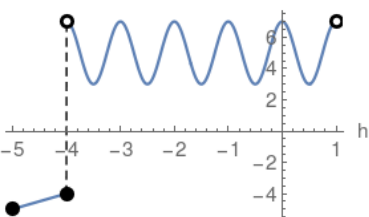
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the h-axis

$$\left[\begin{array}{ll} 2\cos(2\pi h) + 5 & -5 \le h \le -4 \\ h & -4 < h < 1 \end{array}\right.$$
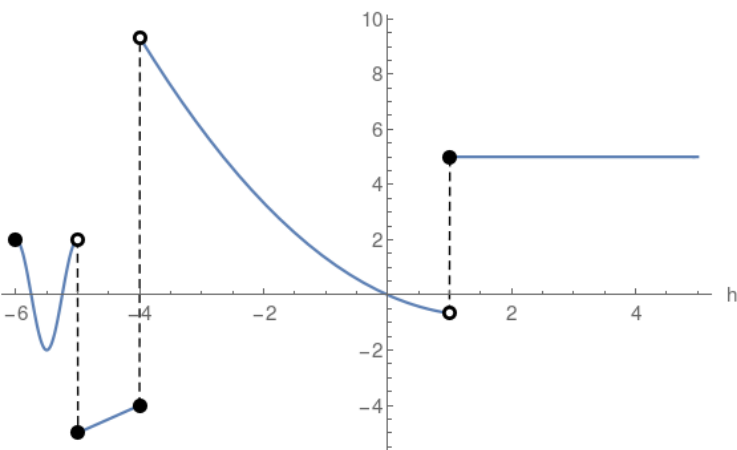


where two functions are juxtaposed together, and for that matter could be pieced differently i.e. swapped:

$$\left[\begin{array}{ll} h & -5 \le h \le -4 \\ 2\cos(2\pi h) + 5 & -4 < h < 1 \end{array}\right.$$



More and more complicated functions could be juxtaposed together:

$$\left[\begin{array}{ll} 2\cos(2\pi h) & -6 \le h < -5 \\ h & -5 \le h \le -4 \\ \dfrac{h^2}{3} - h & -4 < h < 1 \\ 5 & h \ge 1 \end{array}\right.$$



Solid disk refers to inclusion of the point or any of $\le$ $\ge$ $=$ operators

●

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

○