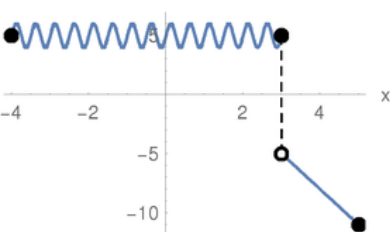


Piecewise Functions

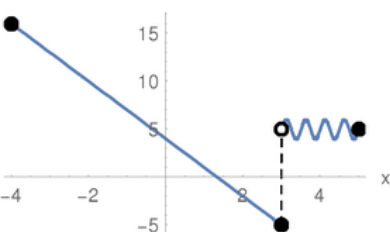
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the x-axis

$$\begin{cases} \sin(4\pi x) + 5 & -4 \leq x \leq 3 \\ 4 - 3x & 3 < x \leq 5 \end{cases}$$



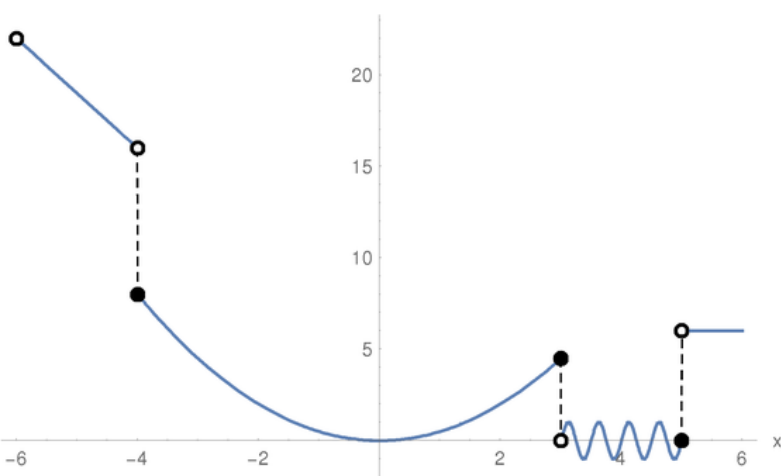
where two functions are juxtaposed together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} 4 - 3x & -4 \leq x \leq 3 \\ \sin(4\pi x) + 5 & 3 < x \leq 5 \end{cases}$$



More and more complicated functions could be juxtaposed together:

$$\begin{cases} 4 - 3x & -6 < x < -4 \\ \frac{x^2}{2} & -4 \leq x \leq 3 \\ \sin(4\pi x) & 3 < x \leq 5 \\ 6 & x > 5 \end{cases}$$



Solid disk corresponds to inclusion of the point or any of $\leq \geq =$ operators



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

