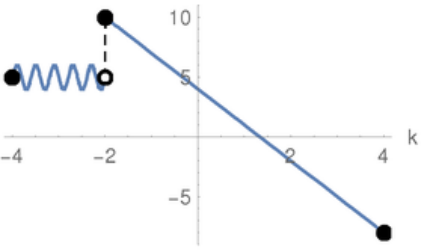
Piecewise Functions

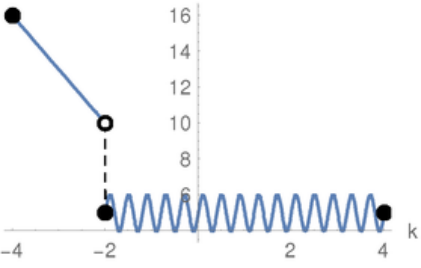
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the k-axis

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



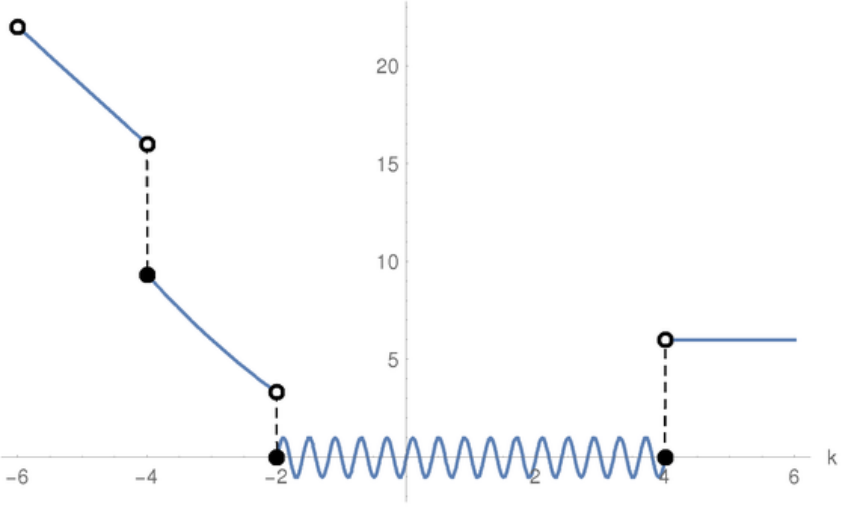
where two functions are juxtaposed together, and for that matter could be pieced differently i.e. swapped:

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



More and more complicated functions could be juxtaposed together:

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



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

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

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