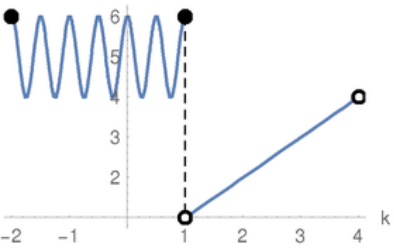
Piecewise Functions

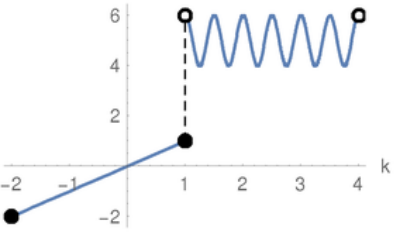
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the k-axis

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



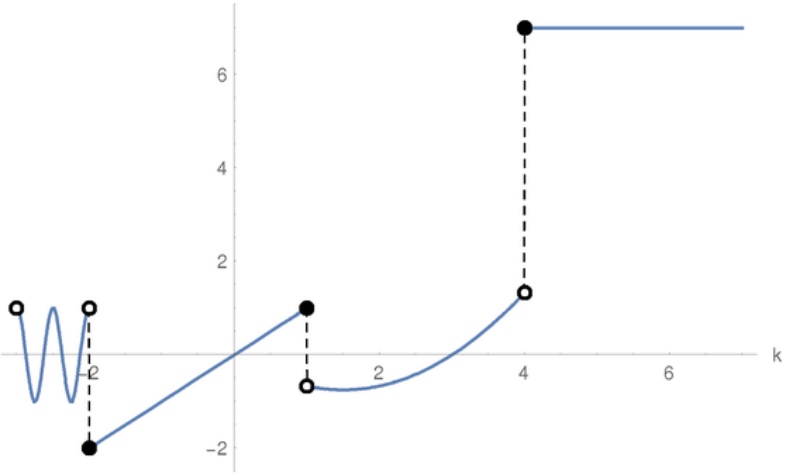
where two functions are juxtaposed together, and for that matter could be pieced differently i.e. swapped:

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



More and more complicated functions could be juxtaposed together:

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



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

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

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