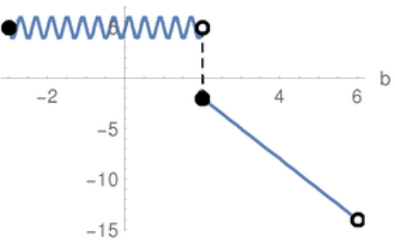
Piecewise Functions

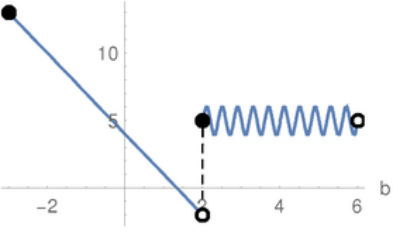
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the b-axis

$$\begin{cases} \sin(5\pi b) + 5 & -3 \le b < 2 \\ 4 - 3b & 2 \le b < 6 \end{cases}$$



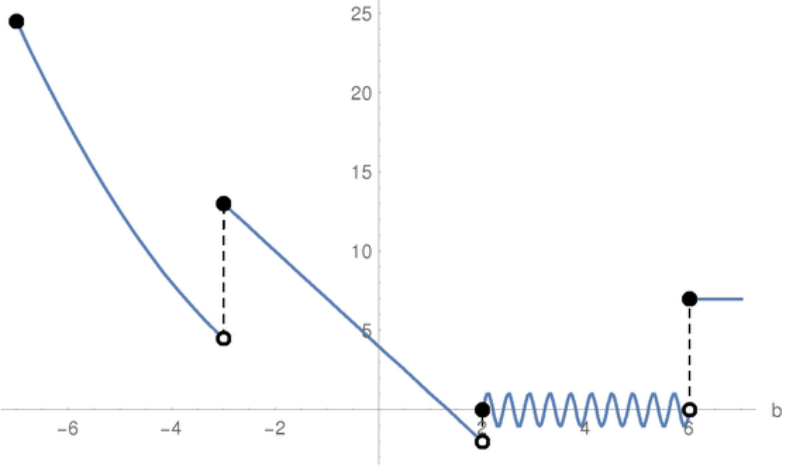
where two functions are placed together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} 4 - 3b & -3 \le b < 2 \\ \sin(5\pi b) + 5 & 2 \le b < 6 \end{cases}$$



More and more complicated functions could be placed together:

$$\begin{cases} \frac{b^2}{2} & -7 \le b < -3 \\ 4 - 3b & -3 \le b < 2 \\ \sin(5\pi b) & 2 \le b < 6 \\ 7 & b \ge 6 \end{cases}$$



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

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

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