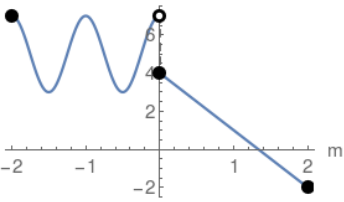
Piecewise Functions

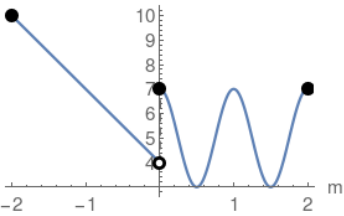
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the m-axis

$$\begin{cases} 2\cos(2\pi m) + 5 & -2 \le m < 0 \\ 4 - 3m & 0 \le m \le 2 \end{cases}$$



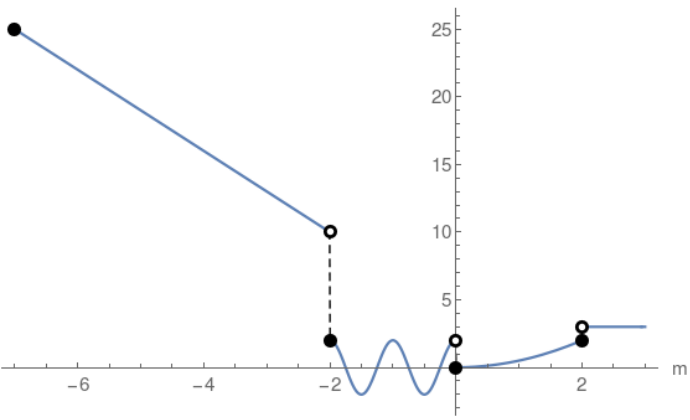
where two functions are pieced together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} 4 - 3m & -2 \le m < 0 \\ 2\cos(2\pi m) + 5 & 0 \le m \le 2 \end{cases}$$



More and more complicated functions could be pieced together:

$$\begin{cases} 4 - 3m & -7 \le m < -2 \\ 2\cos(2\pi m) & -2 \le m < 0 \\ \frac{m^2}{2} & 0 \le m \le 2 \\ 3 & m > 2 \end{cases}$$



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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