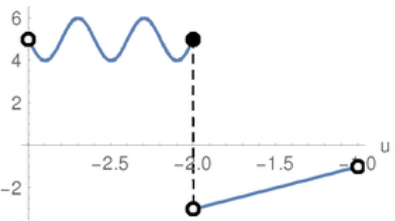
Piecewise Functions

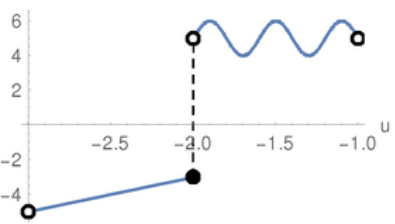
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the u-axis

$$\begin{cases} \sin(5\pi u) + 5 & -3 < u \leq -2 \\ 2u + 1 & -2 < u < -1 \end{cases}$$



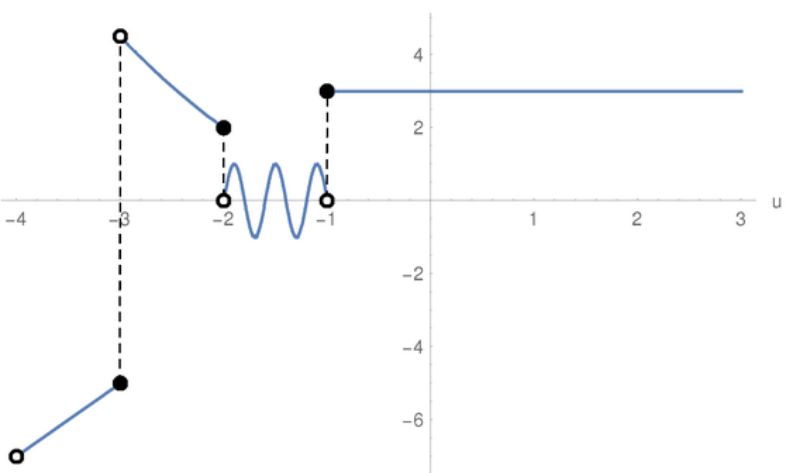
where two functions are placed together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} 2u + 1 & -3 < u \leq -2 \\ \sin(5\pi u) + 5 & -2 < u < -1 \end{cases}$$



More and more complicated functions could be placed together:

$$\begin{cases} 2u + 1 & -4 < u \leq -3 \\ \frac{u^2}{2} & -3 < u \leq -2 \\ \sin(5\pi u) & -2 < u < -1 \\ 3 & u \geq -1 \end{cases}$$



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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