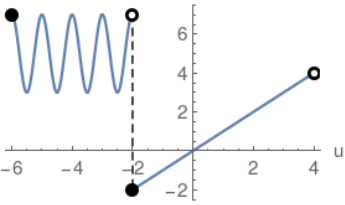
Piecewise Functions

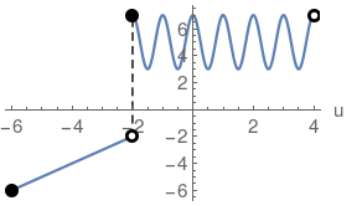
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the u-axis

$$\begin{cases} 2\cos(2\pi u) + 5 & -6 \le u < -2 \\ u & -2 \le u < 4 \end{cases}$$



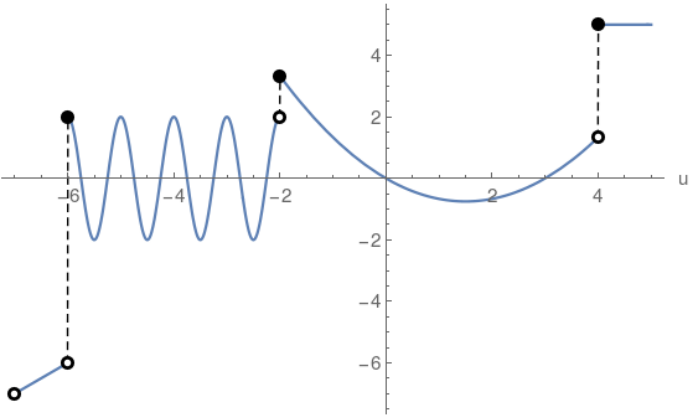
where two functions are glued together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} u & -6 \le u < -2 \\ 2\cos(2\pi u) + 5 & -2 \le u < 4 \end{cases}$$



More and more complicated functions could be glued together:

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



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

●

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

○