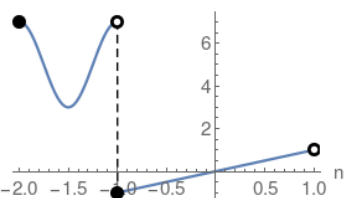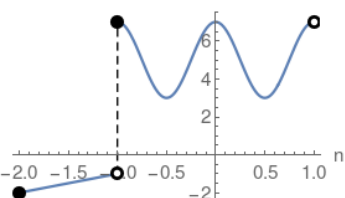# Piecewise Functions

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

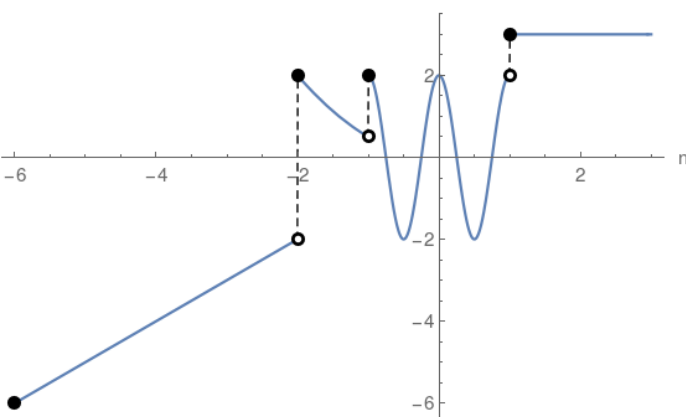$$\begin{cases} 2\cos(2\pi n) + 5 & -2 \le n < -1 \\ n & -1 \le n < 1 \end{cases}$$

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

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

More and more complicated functions could be juxtaposed together:

$$\begin{cases} n & -6 \le n < -2 \\ \frac{n^2}{2} & -2 \le n < -1 \\ 2\cos(2\pi n) & -1 \le n < 1 \\ 3 & n \ge 1 \end{cases}$$

Solid disk corresponds to inclusion of the point or any of $\le$ $\ge$ = operators
●

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