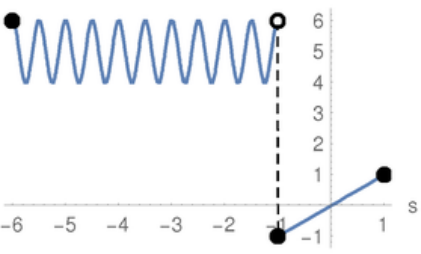
# Piecewise Functions

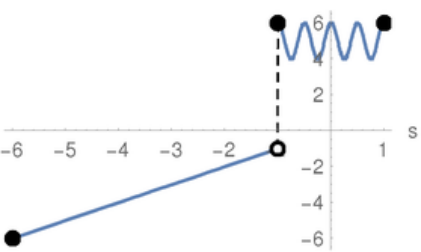
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the s-axis

$$\begin{cases} \cos(4\pi s) + 5 & -6 \le s < -1 \\ s & -1 \le s \le 1 \end{cases}$$



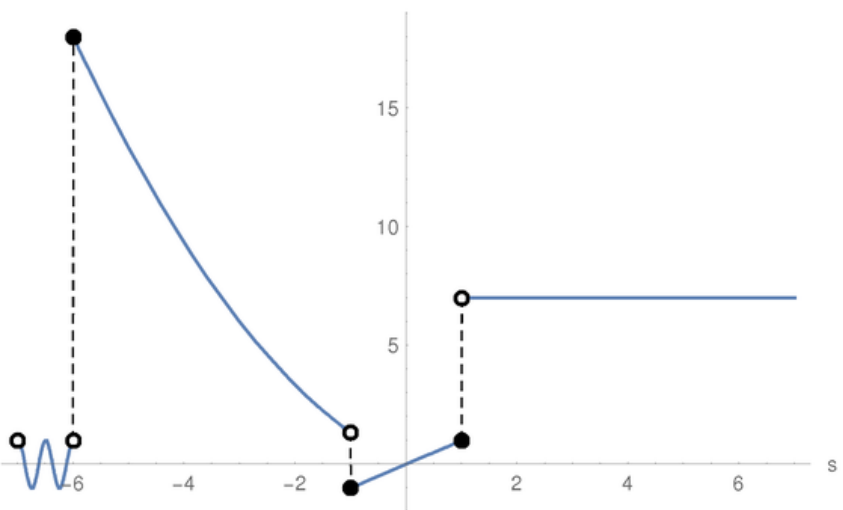

where two functions are stitched together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} s & -6 \le s < -1 \\ \cos(4\pi s) + 5 & -1 \le s \le 1 \end{cases}$$




More and more complicated functions could be stitched together:

$$\begin{cases} \cos(4\pi s) & -7 < s < -6 \\ \frac{s^2}{3} - s & -6 \le s < -1 \\ s & -1 \le s \le 1 \\ 7 & s > 1 \end{cases}$$




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

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

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