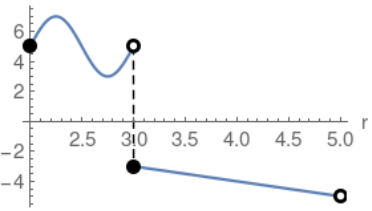
Piecewise Functions

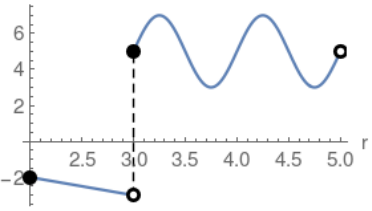
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the r-axis

$$\begin{cases} 2\sin(2\pi r) + 5 & 2 \le r < 3 \\ -r & 3 \le r < 5 \end{cases}$$



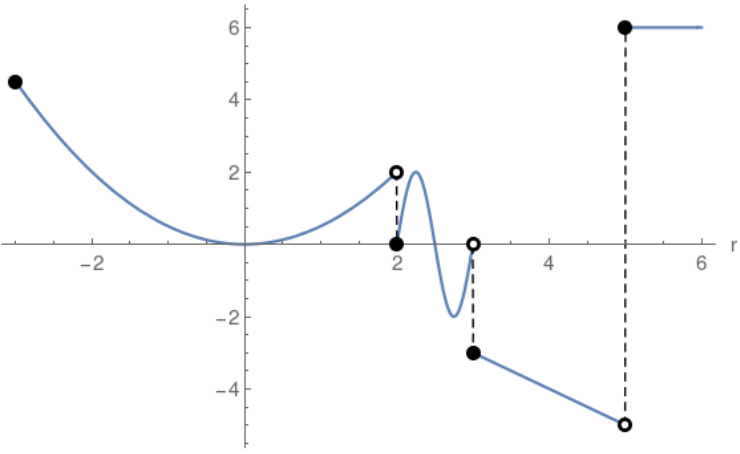
where two functions are placed together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} -r & 2 \le r < 3 \\ 2\sin(2\pi r) + 5 & 3 \le r < 5 \end{cases}$$



More and more complicated functions could be placed together:

$$\begin{cases} \frac{r^2}{2} & -3 \le r < 2 \\ 2\sin(2\pi r) & 2 \le r < 3 \\ -r & 3 \le r < 5 \\ 6 & r \ge 5 \end{cases}$$



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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