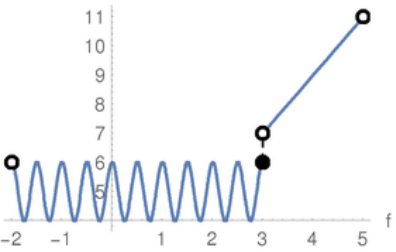
# Piecewise Functions

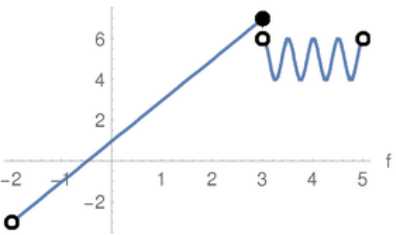
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the f-axis

$$\begin{cases} \cos(4\pi f) + 5 & -2 < f \leq 3 \\ 2f + 1 & 3 < f < 5 \end{cases}$$



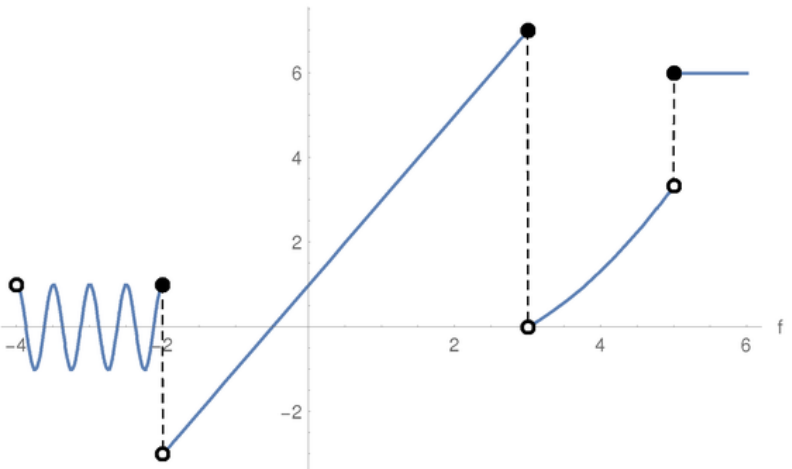

where two functions are stitched together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} 2f + 1 & -2 < f \leq 3 \\ \cos(4\pi f) + 5 & 3 < f < 5 \end{cases}$$




More and more complicated functions could be stitched together:

$$\begin{cases} \cos(4\pi f) & -4 < f \leq -2 \\ 2f + 1 & -2 < f \leq 3 \\ \frac{f^2}{3} - f & 3 < f < 5 \\ 6 & f \geq 5 \end{cases}$$




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

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

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