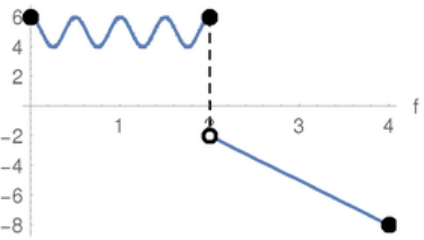
# Piecewise Functions

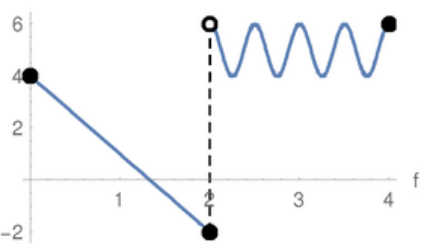
To define piecewise means that the function values and graphs are defined over a particular and generally limited section of the f-axis

$$\begin{cases} \cos(4\pi f) + 5 & 0 \le f \le 2 \\ 4 - 3f & 2 < f \le 4 \end{cases}$$



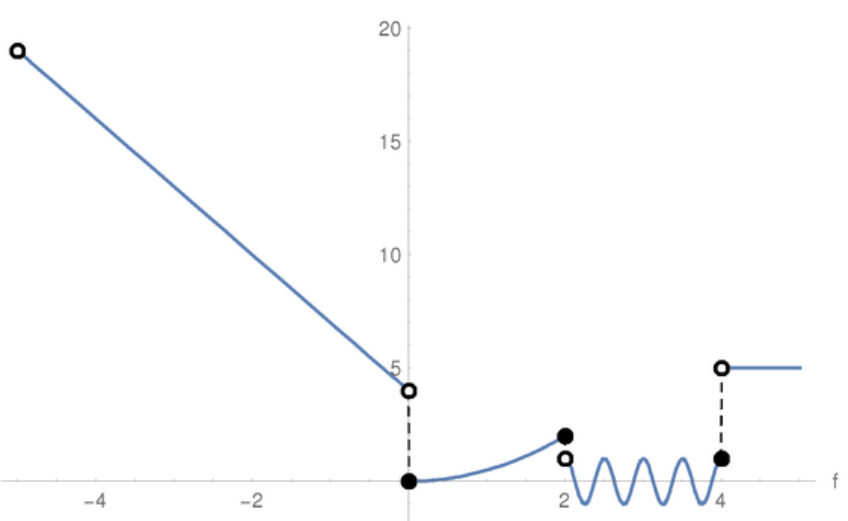

where two functions are pieced together, and for that matter could be pieced differently i.e. swapped:

$$\begin{cases} 4 - 3f & 0 \le f \le 2 \\ \cos(4\pi f) + 5 & 2 < f \le 4 \end{cases}$$




More and more complicated functions could be pieced together:

$$\begin{cases} 4 - 3f & -5 < f < 0 \\ \frac{f^2}{2} & 0 \le f \le 2 \\ \cos(4\pi f) & 2 < f \le 4 \\ 5 & f > 4 \end{cases}$$




**Solid disk** refers to inclusion of the point or any of ⩽ ⩾ = operators

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

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