The **standard normal distribution** is the function

\[ f(z) = \frac{1}{\sqrt{2\pi}} e^{-\frac{z^2}{2}} \]

Its graph is a bell curve above a region of area 1, with inflection points at \( z = -1 \) and \( z = +1 \).

The probability distribution of a continuous rv \( Z \) is standard normal if \( P(a < Z < b) = \text{area under curve between } z = a \text{ and } z = b \).