



# Assignment 16

---

# Exercise: Error function

- ❏ Error function  $\text{erf}(x)$  is formally defined as

$$\text{erf}(z) = \frac{2}{\sqrt{\pi}} \int_0^z e^{-t^2} dt$$

- ❏ See [https://en.wikipedia.org/wiki/Error\\_function](https://en.wikipedia.org/wiki/Error_function)

- ❏ (i) Use Mathematica command **Erf[z]** to plot the error function for the interval  $-3 < z < 3$ .

- ❏ (ii) Use your DIY integration code based on Simpson's rule packaged in a Module form to generate a set of values  $\{\text{erf}(-3.00), \text{erf}(-2.9), \text{erf}(-2.8), \dots, \text{erf}(3.00)\}$ .

- ❏ (iii) Overlap the ListPlot of (ii) on the graph plotted in (i). Both code must agree.

- ❏ The curve should look like that displayed in the following page.

