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Introduction to Numerical Analysis I
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Quiz 3

1. Given a function f with

$$x_0 = -3\,, \quad x_1 = -2\,, \quad x_2 = -1\,, \quad x_3 = 0\,, \quad x_4 = 1\,, \quad x_5 = 2\,, \quad \text{and} \quad x_6 = 3\,.$$

and

$$f(x_0) = 0\,, \quad f(x_1) = -0.2\,, \quad f(x_2) = -0.2\,, \quad f(x_3) = 0\,,$$
$$f(x_4) = 0.2\,, \quad f(x_5) = 0.2\,, \quad \text{and} \quad f(x_6) = 0\,.$$

compute the derivative of f at $x = 0.5$.

2. Evaluate the integral

$$\int_{-1}^{1} \mathrm{e}^{-x^2}\, dx\,.$$