

Exercise 2

In Exercises 1–4, show that the given function $u(x)$ is a solution of the corresponding Fredholm integral equation:

$$u(x) = e^{2x + \frac{1}{3}} - \frac{1}{3} \int_0^1 e^{2x - \frac{5}{3}t} u(t) dt, \quad u(x) = e^{2x}$$