

Exercise 15

In Exercises 13–16, show that the given function $u(x)$ is a solution of the corresponding Volterra integro-differential equation:

$$u''(x) = 1 + \int_0^x (x-t)u(t) dt, \quad u(0) = 1, \quad u'(0) = 0, \quad u(x) = \cosh x$$