

## Exercise 6

For each of the following integro-differential equations, classify as Fredholm, Volterra, or Volterra-Fredholm integro-equation

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

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### Solution

This is a Volterra integro-differential equation because one of the limits of integration is not constant.