

Exercise 4

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

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