

Exercise 9

For each of the following integral equations, classify as Fredholm, Volterra, or Volterra-Fredholm integral equation and find its kind. Classify the equation as singular or not.

$$u(x) = \frac{3}{2}x + \frac{1}{6}x^3 - \int_0^x (x-t)u(t) dt - \int_0^1 xu(t) dt$$