

Integral equations are equations in which the unknown function appears inside a definite integral they are closely related to differential equations.

Initial value problems and boundary value problems for ordinary and partial differential equations can often be written as integral equations and some integral equations can be written as initial or boundary value problems for differential equations.

This research consists of two chapters, in the first chapter we define the integral equations and types of integral equations with some illustrative examples. The second chapter is concerned with the non-homogeneous Fredholm Integral Equation of the second kind. We give some methods of solving integral equations, for example, the Adomian Decomposition method and the Modified Decomposition Method.