

MT-613 Perturbation and Non-Perturbation Methods

Asymptotic expansions. Taylor expansion as a conventional converging power series and as an example of an asymptotic expansion, Asymptotic expansions for definite integrals with the upper or lower limits of integration depending on small or large parameters. Variational iteration method, Homotopy perturbation method, Homotopy analysis method, Solution of ordinary and partial differential equations without small parameters (algebraic example), Solution of the boundary layer. Ordinary differential equations with Methods to determine location of the boundary layer, Differential transformation method.