

Variational Approach for the Lane-Emden Equation

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A variational principle for the Lane-Emden equation is established by He's semi-inverse method. Based on the established variational formulation, approximate solutions can be easily obtained by the Ritz method. The obtained solutions are in good agreement with the exact ones. The results show that the variational approach is very effective and convenient for solving the Lane-Emden equation.

Key words: Variational Principle; Lane-Emden Equation; Semi-Inverse Method.

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