

Abstract

In this paper, numerical process Runge-Kutta method of the social epidemic model is presented to solve the problem in the form of nonlinear initial value problems (IVP) of ordinary differential equations with multiple parameters. The variables of the systems are dependent on time t . Spain weight reduction model is considered as an application of social epidemic problem. The Runge-Kutta method is used as a numerical method to solve such model under study. The numerical outputs are tabulated and compared with previous statistical estimations for 2030. The obesity problem in $N(t)$ will decrease while in $S(t)$ and $O(t)$ will increase in the future.