Symbolic Computation and Construction of New Exact Traveling Wave Solutions to Fitzhugh-Nagumo and Klein-Gordon Equations

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With the aid of the symbolic computation system Mathematica, many exact solutions for the Fitzhugh-Nagumo equation and the Klein-Gordon equation with a quadratic nonlinearity are constructed by an auxiliary equation method, the so-called (G'/G)-expansion method, where the new and more general forms of solutions are also obtained. Periodic and solitary traveling wave solutions capable of moving in both directions are observed.