

ZMATH 2016d.00783

Rivera-Figueroa, Antonio; Rivera-Rebolledo, José Manuel

A straightforward method to solve the linear differential equations with constant coefficients of order n .

Int. J. Math. Educ. Sci. Technol. 46, No. 6, 928-943 (2015).

Summary: In this paper, we generalize a straightforward method to solve the nonhomogeneous second-order linear differential equations with constant coefficients published in a previous paper, for the case of linear differential equations of order n . As in the case of order 2, this new method does not require the uniqueness and existence theorem of the solution of the problem of initial values nor the characterization of the linear independence of solutions by the Wronskian nor the method of variation of parameters. Moreover, we get a unique formula that expresses the general solution independently of the multiplicities of the roots of the characteristic equation.

Classification: I75

Keywords: linear differential equations of order n ; method of variation of parameters; general solution
doi:10.1080/0020739X.2015.1018977