A Note on Semi-classical Orthogonal Polynomials

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Abstract

We prove that one characterization for the classical orthogonal polynomials sequences (Hermite, Laguerre, Jacobi and Bessel) cannot be extended to the semi-classical ones.

1 Introduction

Recently, in [6] were established new characterizations of the classical monic orthogonal polynomials sequences (MOPS). In that work, the authors consider as a starting point the Pearson's equation in a distributional sense. It is well known that most of this characterizations can be extended for semi-classical MOPS (see [2, 4, 11]). Following another point of view we will prove that: