

New expressions for the Laplace Limit Constant

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Abstract. The solution of Kepler’s famous equation can be expressed as an infinite sum for which the radius of convergence, λ , is called the Laplace Limit Constant. So far, no explicit expression has been discovered for this constant. In this note, we point out that λ can be expressed in closed form, in terms of the r -Lambert special function. Based upon this observation, we give a new infinite series representation for λ in terms of the Laguerre polynomials.

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