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Zeros of Hypergeometric Functions

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Abstract. For certain ranges of parameters, it is shown that the hypergeometric function $F(a, b; b + 1; z)$ has no zeros in a specified half-plane. It is also shown that the zeros of the hypergeometric polynomials

$$F(-n, kn + \ell + 1; kn + \ell + 2; z)$$

cluster on one loop of a specified lemniscate. Other results then follow from quadratic relations.

Keywords. Hypergeometric functions, hypergeometric polynomials, Jacobi polynomials, zeros, Euler integral, asymptotic curves.

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