Abstract

Some results concerning the non-existence of complex and purely imaginary zeros of the transcedental equation $F(z)J_\nu(z) + G(z)J'_\nu(z) = 0$ are given, where $J_\nu(z)$ is the Bessel function of first kind and order ν (in general complex), $J'_\nu(z)$ is the derivative of $J_\nu(z)$, and $F(z)$, $G(z)$ are analytic functions. The obtained results improve and generalize previously known ones.