

**SOLUTIONS FOR AN EQUATION OF A BEND OF  
A WEIGHABLE ROD**

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**Abstract.** Two approaches to a solution of a linear differential equation describing Bend of a weighable rod are investigated. The solutions are represented in special functions. Practical application of them is shown.

**MSC:** 34B60, 34B70, 34D99

**Key words:** bend of a rod, Bessel's and Lommel's functions, stability.