

16/1 (2018), 43–53 DOI: 10.5485/TMCS.2018.0442 tmcs@science.unideb.hu http://tmcs.math.unideb.hu

Integral part problems derived from a solution of an infimum problem

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Abstract. In this paper, we solve the following two integral part problems: Find all $r \in \mathbb{R}$ satisfying

 $r^{2} = [r]([r]+1),$ resp. $r^{2} \leq [r]([r]+1).$

These problems have been mainly motivated by a solution of an infimum problem of Z. Boros and Á. Száz.

 $Key\ words\ and\ phrases:$ Real and integral numbers, integral part equations and inequalities.

ZDM Subject Classification: Primary 39B22, 39B62; Secondary 97I10, 97I70.

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(Received December, 2017)

The work of the second author has been supported by the Hungarian Scientific Research Fund (OTKA) Grant K-111651.