On some special classes of Gronwall lemmas

ANTON S. MUREŞAN

ABSTRACT.

Problem 9 in [Rus, I. A., Gronwall lemmas: ten open problems, Scientiae Math. Jpn., 70 (2009), No. 2, 221-228] is the following: Give new concrete and abstract Gronwall lemmas. The aim of this paper is to give and study some special classes of Gronwall lemmas.

DEPARTMENT OF STATISTICS, FORECASTS AND MATHEMATICS "Babeş-Bolyai" University FACULTY OF ECONOMIC SCIENCES AND BUSINESS ADMINISTRATION T. Mihali 58-60, 400591 Cluj-Napoca, Romania E-mail address: anton.muresan@econ.ubbcluj.ro

Received: 30.10.2011; In revised form: 03.09.2012; Accepted: 15.10.2012 2010 Mathematics Subject Classification. 47H10, 54H25.

Key words and phrases. Fixed point, lower fixed point, upper fixed point, Gronwall lemma, weakly Picard operator, differential inequality, integral inequality, operatorial inequality.