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ARITHMETIC FUNCTIONS, PRIME COUNTING FUNCTION AND POLYNOMIALS

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Abstract. In this paper we prove some properties regarding classical arithmetic functions and the prime counting function in connection with polynomials. More specific, this paper deals with composition between arithmetic functions or between the prime counting function and a polynomial and we study when some of these kind of compositions are rational functions or another polynomial. In the proofs of our results we shall use inequalities or estimates of arithmetic functions and the prime counting function as well as some elementary inequalities.

Mathematics subject classification (2010): 11K65, 11R09, 11N05, 11N13.
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