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Mark Burgin* (mburgin@math.ucla.edu), University of California, Los Angeles, Los Angeles, CA 90095. *Arithmetics where almost all numbers are even*. Preliminary report.

Non-Diophantine arithmetics are determined by a functional parameter, that is, any arithmetic in this family, properties and laws of its operations depend on a definite function $f(x)$ [M.Burgin, Elements of Non-Diophantine Arithmetics, Proc. 6th Int.Conf. on Statistics, Mathematics and Related Fields, Honolulu, 2007, pp. 190-203]. The conventional, Diophantine arithmetic is a member of this parametric family with the parameter equal to the identity function $f(x) = x$. Let \mathbf{N}_{exp} be a prearithmetic with the parameter $f(n) = 2^n$ when $n > 0$ and $f(0) = 1$.

Proposition 1. In \mathbf{N}_{exp} , all numbers but one are even.

Corollary 1. The prearithmetic \mathbf{N}_{exp} has only one prime number.

Proposition 2. In \mathbf{N}_{exp} , any number is divisible by any smaller number. Let \mathbf{A}_{exp} be an arithmetic with the parameter $f(n) = 2^{n-1}$ when $n > 0$ and $f(0) = 0$.

Proposition 3. In \mathbf{A}_{exp} , all numbers but one are even.

Corollary 2. Arithmetic \mathbf{A}_{exp} has only one prime number.

Theorem 1. In an arbitrary arithmetic \mathbf{A} , if there is one odd number, then there are infinitely many prime numbers. (Received February 14, 2008)