## Шайма бидан ALGORITHMS FUNDAMENTALS THEORY

КН 220 i.в

### **Laboratory Training 5**

*COMBINATORIAL ALGORITHMS*

**Objective:**

Study random number generators and randomness tests.

**Task**:

Develop a program that reads from the keyboard number N (1 <N <256) and a random number generator parameters and displays the generated sequence of N numbers. The program saves a graphic representation of the sequence to file according to variant and displays the result of a NIST test (according to variant).

**Variant 5:** (*1.2.2*)

Linear congruential method.

Distribution on plane (pairs of elements are processed as point coordinates (x, y)).

*Linear congruential method:*

A linear congruential generator is an algorithm that yields a sequence of pseudo-randomized numbers calculated with a discontinuous piecewise linear equation. The method represents one of the oldest and best-known pseudorandom number generator algorithms.

Suggested Code for this lab: