

1154-VS-890

Gabriel Khan, Mizan R. Khan, Joydip Saha and Peng Zhao* (peng.zhao@indstate.edu),
Department of Mathematics, Indiana State University, Terre Haute, IN 47809. *A Conjectural
Inequality for Visible Points in Lattice Parallelograms.*

Let $a, n \in \mathbb{Z}^+$, with $a < n$ and $\gcd(a, n) = 1$. Let $P_{a,n}$ denote the lattice parallelogram spanned by $(1, 0)$ and (a, n) , that is,

$$P_{a,n} = \{t_1(1, 0) + t_2(a, n) : 0 \leq t_1, t_2 \leq 1\},$$

and let

$$V(a, n) = \# \text{ of visible lattice points in the interior of } P_{a,n}.$$

In this talk, we present some interesting results for $V(a, n)$. The numerics and graphs suggest the conjecture that for $a \neq 1, n - 1$, $V(a, n)/n$ satisfies the inequality

$$0.5 < V(a, n)/n < 0.75.$$

(Received September 11, 2019)