# Problem Tutorial: "Ineq"

Rewrite the inequality as $a_i x + b_i y \le c_i - 1$. We can see that each triple denotes a half-plane including its border on the $(x, y)$ plane.

The most restricting set of half-planes including the given points can be found by building the convex hull of points $(x_i, y_i)$: our half-planes correspond to its edges then.

We need to check if there exists another integer point $(x', y') \notin S$ inside the convex hull. It is not very easy to find all integer points inside a convex polygon, but instead of finding them, let's just count them using Pick's theorem: if their number is $n$, the answer is positive, otherwise it's more than $n$ and the answer is negative.