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Q.1.
Given Num r and max LP

$\max c^T \cdot \vec{x}$
s.t. $A\vec{x} \leq \vec{b}$
$\vec{x} \geq 0$

A = m×n matrix
b = m directional vector
c = n dimensional vector
r is a number

We want to know if $OPT(LP) \geq k$

An efficient verifier could be created by taking the input $[A, \vec{c}, \vec{b}, K, \vec{x}]$
The inputs create $c^T \cdot \vec{x}$ and checks if it is greater than K, returns true if so. false otherwise.
The complement is $OPT(LP) < k$ takes in the same input and has the same time efficiency. Returns true if $OPT < K$, otherwise false