Kuhn-Tucker Theory (Revised)

We showed in class that the set

\[ X = \{ g(x) = |x| + |y| \leq 1 \} \]  

(1)

describes a convex set. The set is shown below.

The set \( X \) described in (1).
$X$ can be shown to be a convex set because $g(x, y)$ is a convex function, as shown in the graph below.

Graph of $g(x, y)$, along with region where $g(x, y) \leq 1$. 