

$$1. c \quad \|x\|_1 = \sum_{i=1}^n |x_i|$$

$$\|x+y\|_1 \leq \|x\|_1 + \|y\|_1, \text{ FOR } x, y \in \mathbb{R}^n$$

$$\|x+y\|_1 = \sum_{i=1}^n |x_i + y_i| = |x_1 + y_1| + |x_2 + y_2| + \dots$$

$$\dots + |x_n + y_n|$$

$$\|x\|_1 + \|y\|_1 = [|x_1| + \dots + |x_n|] + [|y_1| + \dots + |y_n|]$$

SINCE x OR y COULD BE LESS THAN ZERO,

IT FOLLOWS THAT $\|x+y\|_1 \leq \|x\|_1 + \|y\|_1, \text{ FOR } \forall$

$x, y \in \mathbb{R}^n$