Recall that for $a_1, \ldots, a_n \in \mathbb{R}$, $\prod_{i=1}^{n} a_i = a_1 a_2 \cdots a_n$.

Justify all answers!

(8 pts)

(1) [+8] Prove that for any $n \in \mathbb{N}$ and any $x_1, \ldots, x_n \in [0, 1]$,

$$\prod_{i=1}^{n}(1 - x_i) \geq 1 - \sum_{i=1}^{n} x_i.$$