Let $(x, y) \in \mathbb{N}^2$, let $(\epsilon', \epsilon) \in [0, 1[^2$
$\implies (x + \epsilon') * (y + \epsilon) = xy + y\epsilon' + x\epsilon + \epsilon'\epsilon$
Given $\epsilon' = x\alpha'$ and $\epsilon = y\alpha, (\alpha, \alpha') \in [0, 1[^2$
$\implies (x + \epsilon') * (y + \epsilon) = xy + xy\alpha' + xy\alpha + xy\alpha\alpha'$
Given $\alpha\alpha = o(xy + xy\alpha' + xy\alpha)$
$\implies (x + \epsilon') * (y + \epsilon) \sim xy + xy(\alpha + \alpha')$■