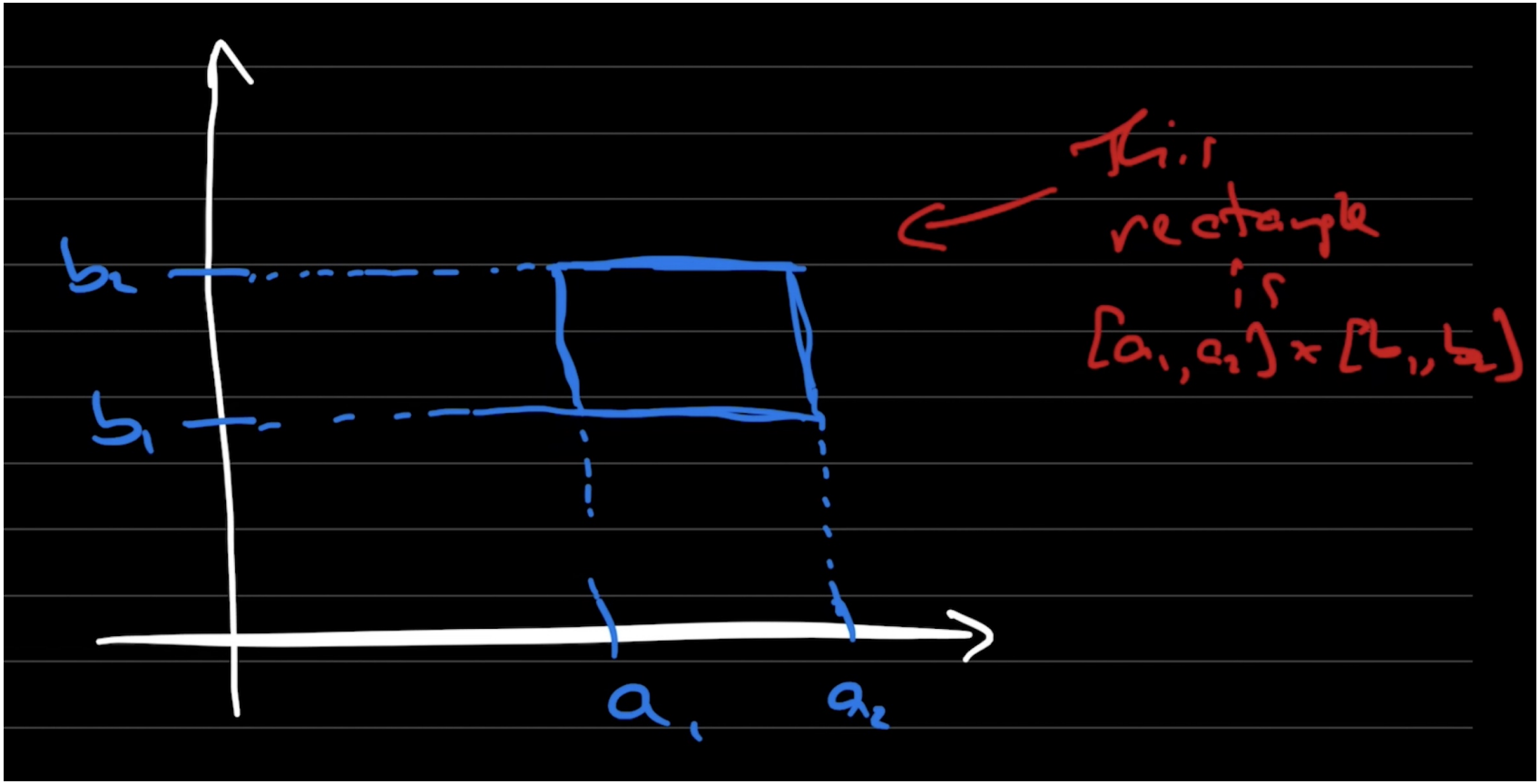If $A = [a_1, a_2]$ and $B = [b_1, b_2]$, then