1. Let $\{\lambda_i\}_I \cup \{\lambda_j\}_J$ be a partition of unity subordinate to A^c, B^c, with $i \in I \iff \text{supp}(\lambda_i) \subset A^c$. Then $f = \sum_I \lambda_i$ is smooth (smoothness is a local property and locally it is a finite sum of smooth functions), and $f \equiv 0$ on A by construction. Finally on B we have $1 = f + \sum_J \lambda_j = f + 0 = f$ since λ_j are only supported on B^c. □

2.