

Let $n > d$ be positive integers. Choose n independent, uniformly distributed random points x_1, \dots, x_n in the unit ball $B \subset \mathbb{R}^d$ centered at the origin. For a point $p \in B$ denote by $f(p)$ the probability that the convex hull of x_1, \dots, x_n contains p . Prove that if $p, q \in B$ and the distance of p from the origin is smaller than the distance of q from the origin, then $f(p) \geq f(q)$.