

Suppose $n \geq 4$ and let M be a finite set of n points in \mathbb{R}^3 , no four of which lie in a plane. Assume that the points can be coloured black or white so that any sphere which intersects M in at least four points has the property that exactly half of the points in the intersection of M and the sphere are white. Prove that all of the points in M lie on one sphere.