

February 2006 M⁶ Problem

A circle of radius 1 and 2006 arbitrary points are drawn on the plane. Prove that there is a point P on the circle, such that the sum of the distances from P to each of the 2006 given points is at least 2006.

Hint: take the two end points of a diameter P_1 and P_2 and consider the sum of the distances from P_1 to each of the 2006 given points plus the sum of the distances from P_2 to each of the 2006 given points.

**Solutions can be submitted until midnight March 15,
2006**