

Let  $D$  be the closed unit disk in the plane, and let  $p_1, p_2, \dots, p_n$  be fixed points in  $D$ . Show that there exists a point  $p$  in  $D$  such that the sum of the distances of  $p$  to each of  $p_1, p_2, \dots, p_n$  is greater than or equal to  $n$ .