

5.

Assume that there are two points such that $P_1, P_2 \in P$ and have the largest distance between them of any two points $\in P$ and are not on the edge of the convex hull. Since the shape is convex, any line between two points in the convex hull is in the convex hull by definition. There must be a point P_3 on the convex hull that is aligned with the line going through P_1 and P_2 due to the convex structure. Since P_3 is on the convex hull, it must be further away from one of P_1, P_2 and thus having a longer distance than that between P_1 and P_2 . This is a contradiction and thus the two points with the largest distance between them must be on the convex hull.