



Bilkent University
Department of Mathematics

PROBLEM OF THE MONTH

Term: July-August 2020

Let $A_1A_2A_3A_4$ be a circumscribed quadrilateral with the perimeter p_1 and with the sum of its diagonals k_1 and let $B_1B_2B_3B_4$ be a circumscribed quadrilateral with the perimeter p_2 and with the sum of its diagonals k_2 . Given

$$p_1^2 + p_2^2 = (k_1 + k_2)^2$$

prove that $A_1A_2A_3A_4$ and $B_1B_2B_3B_4$ are congruent squares.