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A new characterization of projective special unitary group $PSU(5, q)$

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Abstract: Projective special unitary groups $PSU(5, q)$, where

$$\frac{q^4 - q^3 + q^2 - q + 1}{(5, q + 1)}$$

is a prime, is uniquely determined by its order and the size of one conjugacy class.

Keywords: element order; conjugacy class; prime graph; projective special unitary group

AMS Subject Classification: 20D06, 20D60

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