

Real solutions of Painlevé VI

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We study real solutions y of Painlevé VI equation with real parameters on one of the three intervals I between the fixed singularities. A point $t \in I$ is called special if $y(t) \in \{0, 1, t, \infty\}$. We put into correspondence to each such solution a one-parametric family of circular pentagons, and produce a combinatorial algorithm which gives the number and mutual position of special points on I . The monodromy of the associated linear equation is recovered from the family of pentagons. In particular, we describe those solutions which do not have special points. Based on the joint work with Andrei Gabrielov.