

$\{1\}$ -inverses of Square Matrices and Rational Canonical Form

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ABSTRACT. In this paper we solve the first Penrose's equation $AXA = A$ for square real matrices A using the rational canonical form of matrices. The idea is to find $\{1\}$ -inverse X of A using similarity $X = TZT^{-1}$, where Z is $\{1\}$ -inverse of B and $A = TBT^{-1}$ is the rational canonical representation of A .

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