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EX.4.1.6, Sauer3

Let A be an n-by-n nonsingular matrix. (a) Prove that $(A^T)^{-1} = (A^{-1})^T$. (b) Let b be a vector of length n, then Ax = b has exactly one solution. We call x this solution. Prove that x is also the unique solution of the normal equations associated with A and b.