Linear Algebra

MA 242   (Spring 2013)
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INVERTIBLE MATRICES
– some rules and facts –

1. If A is an invertible $n \times n$ matrix, then for each $b \in \mathbb{R}^n$, the equation $Ax = b$ has a unique solution $x = A^{-1}b$.

   Why?

2. If A is an invertible matrix, then A^{-1} is invertible and

   $$\left(A^{-1}\right)^{-1} = A.$$

   Why?

3. If A and B are invertible matrices, then so is AB with inverse

   $$(AB)^{-1} = B^{-1}A^{-1}.$$

   Why?

4. If A is an invertible matrix, then so is A^T with inverse

   $$\left(A^T\right)^{-1} = \left(A^{-1}\right)^T.$$

   Why?

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