Math 4133 - Linear Algebra

Quiz #1 - 2011.01.21

Solutions

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1. Give a reason as to why matrix multiplication is defined the way it is.

   Matrix multiplication is defined the way it is so that linear systems of equations can be written in the form $AX = B$, thus resulting in the solution $X = A^{-1}\,B$, if one were able to calculate the multiplicative inverse of A.

2. If A is of dimension 2×3, what are the possible dimensions on B so that one can perform the multiplication $A\,B$?

   B can be of dimension $3 \times n$, where n is any positive integer.