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Linear algebra

Spring Semester 2013

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Problem Set #2

Due Tuesday 18 february in Class

Exercise 1 ($\star$):
Let $M_{n\times n}(K)$ be the space of the square matrices with n rows and n columns.

1. Prove that the product of two upper triangular matrices is upper triangular and the same fact for strictly upper triangular matrices.
2. Prove that a strictly upper triangular matrix A is nilpotent: $A^n = A \times ..... \times A(ntimes) = 0$.

[F] FOURTH EDITION :

- Section 1.4 Exercises 14 and 15
- Section 1.6 Exercises 8 and 13.

[1]

[1] ($\star$) = easy , ($\star\star$)= medium, ($\star\star\star$)= challenge