

Problem 5: Random Matrix

What is the probability that a randomly chosen 4×4 matrix over $GF(4)$, the finite field with 4 elements, is invertible?

As always, show your work, fully explain and justify your answer. A solution mainly obtained by computers or calculators will not be accepted.

Posting Date 3/17/2019. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 3/29/2019.