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The “52 cycling cards” trick using modular arithmetic.

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Summary: Ordering 52 playing cards according to a particular rule allows one to perform a certain magic trick. By learning the rule, after viewing a given card the performer will be able to predict the next card in the deck. The key to the trick is an application of modular arithmetic, one that the author hopes will lend itself as an interesting device for mathematics education.

Classification: A20 F65

Keywords: modular arithmetic; prime numbers; primitive roots; cyclic groups; Fermat’s Little Theorem

<http://www.ijpam.eu/contents/2012-74-1/1/index.html>