

Some Determinantal Identities for Rectangular Matrices

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In this paper, we shall first review some basic properties of the determinant of rectangular matrices based on the definition given by Radic [1]. Then, we present an extension of some classical determinantal identities for rectangular matrices. We restrict ourselves to three important identities: The Binet-Cauchy Theorem, Trahan Determinantal Identity [2] and Dodgson's Condensation Formula. [1] M. Radic, A definition of the determinant of a rectangular matrix, *Glasnik Mat.* 21 (1966), 17-22. [2] D. H. Trahan, Cyclic dislocations in determinants and a new expansion of a determinant. *Amer. Math. Monthly* 70 (1963), 545.

Note: This is a joint work with M. Bayat, A. Amiri and M. fathy from Iran.