

Department of Mathematics

Applied Mathematics Seminar

On Signed Magic Rectangles

Dr. Abdollah Khodkar

Department of Mathematics

University of West Georgia

Date: November 22

Time: 2-3 PM

Place: Allgood Hall E259

Abstract

A signed magic rectangle $SMR(m,n;k,s)$ is an $m \times n$ array with entries from X , where $X = \{0, \pm 1, \pm 2, \dots, \pm(mk-1)/2\}$ if mk is odd and $X = \{\pm 1, \pm 2, \dots, \pm mk/2\}$ if mk is even, such that precisely k cells in every row and s cells in every column are filled, every integer from set X appears exactly once in the array, and the sum of each row and of each column is zero. In this presentation we first learn the history of signed magic rectangles. Then the results obtained on the existence of an $SMR(m, n; k, s)$ are presented.

1	16	-17	-12	12			-6	6	-3	3	
17	-1			-16	13	5	-5	-13		8	-8
		2	-2	4	-9	9		7	10	-11	-10
-18	-15	15	14		-4	-14	11		-7		18

Figure 1: An $SMR(4,12;9,3)$