Counting Multiple Cyclic Choices Without Adjacencies

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Abstract. We give a particularly elementary solution to the following well-known problem. What is the number of $k$-subsets $X \subseteq I_n = \{1, 2, 3, \ldots, n\}$ satisfying "no two elements of $X$ are adjacent in the circular display of $I_n"$? Then we investigate a new generalization (multiple cyclic choices without adjacencies) and apply it to enumerating a class of 3-line latin rectangles.