

1145-VS-1230      **Timothy B Flowers\*** (flowers@iup.edu). *Pondering a Putnam problem on partitions.*

Problem B2 of the 44th Putnam Exam in 1983 can be restated in terms of integer partitions as follows: find an expression to count the number of binary partitions of  $n$  wherein each part is used at most 3 times. It is natural to extend this question to partitions into powers of  $m$ , or  $m$ -ary partitions. We will show how generating functions motivate a generalization of the Putnam problem to enumerating a two-parameter family of  $m$ -ary integer partitions,  $b_{m,j}^*(n)$ . We then use the generating functions and a bijection to give an identity between  $b_{m,j}^*(n)$  and another family of  $m$ -ary partitions. (Received September 20, 2018)