

1086-VR-2763      **Amber Rosin\*** (arrosin@csupomona.edu), 3801 West Temple Ave., Pomona, CA 91768. *Equal Labelings for  $pq$ -sided dice and the Inevitability of Stupid Dice.*

Given a pair of standard six-sided dice one can get any of the sums  $2, 3, \dots, 12$ . But these sums are not all equally likely to occur. It is well known – and easy to show – that it is impossible to relabel a pair of dice in such a way that the sums 2 through 12 become equally likely. However, it is possible to relabel seven dice in such a way that the standard sums of  $7, 8, 9, \dots, 42$  are all equally likely. We will characterize the numbers  $m$  for which  $m$   $pq$ -sided dice have an equal labeling (where  $p$  and  $q$  are distinct primes). We will also find that such relabelings require the use of some very stupid dice. (Received September 25, 2012)