

1116-AC-372

**William Webb\*** ([webb@math.wsu.edu](mailto:webb@math.wsu.edu)), Mathematics Department, Washington State University, Pullman, WA 99164, and **Thomas Hatdock**. *Super Fair Division - How Many Cuts*.

Super fair division (also called strong fair division) requires all players to receive more than their designated fair shares. It is necessary that not all of the players' measures are identical. We look at the question of how many cuts are needed, assuming that the players can make marks to indicate where they would cut before the actual cuts are made. The bounds obtained improve previous bounds. We consider both the cases of where the fair shares are equal or unequal. For two players the minimum number of cuts is 3. For more than two players we give both inductive and non-inductive procedures. For example, the inductive procedure uses  $n^2 - n + 1$  cuts for either equal or unequal shares, and the non-inductive procedure uses only  $2n + 3$  cuts for equal shares. (Received August 28, 2015)