Problem 4 (due Monday, March 30) Let p>2 be an odd prime number. Integers $a_1,a_2,\ldots a_{p+1}$ in the interval [0,p] have the following property: for every permutation ϕ is of the set $\{1,2,\ldots b_{p+1}\}$ the number $[\sum_{k=1}^{p+1}ka_{\phi}(k)]$ is not divisible by p. Prove that $a_1=a_2=\ldots a_{p+1}$.

Ashton Keith, a freshman majoring in math, is the only person who solved the problem. His solution is based on a different idea than our solution. Both solutions are discussed in the following link Solution

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