

1023-S1-1628

Kurt E Ludwick* (keludwick@salisbury.edu), Department of Mathematics & Computer Science, Salisbury University, Salisbury, MD 21801. *Using Pascal's Triangle modulo p to visualize the Lucas Correspondence Theorem.* Preliminary report.

The Lucas Correspondence Theorem describes a fundamental connection between the values of the binomial coefficients ${}_n C_k$ modulo p and the base p digits of n and k , where n and k are non-negative integers and p is prime. With the help of the PascGaloisJE* software package, we will generate Pascal's Triangle modulo p and show how this can be used to visually demonstrate the Lucas Correspondence Theorem. We will also see how this theorem is in fact the underlying cause of the self-similar behavior of Pascal's Triangle modulo p for prime p .

(* PascGaloisJE is a free software package developed at Salisbury University for visualization of concepts from abstract algebra and number theory. Visit www.pascgalois.org for more information on this software.) (Received September 26, 2006)