

1116-33-1594 **Dominic Lanphier***, Department of Mathematics, 1906 College Heights Blvd., Bowling Green, KY 42101. *Integral Formulas and Generating Functions of Jacobi Polynomials.*

We give two integral formulas with applications to orthogonal polynomials. The first is a general integral formula for generating functions of Jacobi polynomials. As an application we give a new arithmetic generating function for these polynomials. The proof relies on a generalization of Cauchy's beta integral. The second integral formula is an interpolation formula derived from Ramanujan's master theorem. (Received September 20, 2015)