

1014-11-1736 **Pedro J Berrizbeitia*** (pedrob@usb.ve), Departamento de Matemáticas, Universidad Simón Bolívar, 1080-A Caracas, Miranda, Venezuela. *Eisenstein Reciprocity Law, Gaussian Sums and Application to Primality Testing*. Preliminary report.

The Cubic and Biquadratic symbols, and the Cubic and Biquadratic Reciprocity Laws have been used to provide a unified version of a Primality Test for numbers of the form $A3^s \pm 1$ and $A2^s \pm 1$, respectively, where s is large enough. We will review how this has been done and we will show how to use the Power Residue Symbol and the Eisenstein Reciprocity Law to obtain a unified version of a Primality Test for numbers of the form $Am^s \pm 1$, where again s is sufficiently large, and $m > 3$. We then turn to Gaussian Sums and make an observation that may be useful when implementing versions of the APRCL Primality Test. (Received September 29, 2005)