1016-11-250   **Reginald E Sawilla** and **Hugh C Williams*** (`williams@math.ucalgary,ca`), Dept. of Mathematics and Statistics, University of Calgary, Calgary, Alberta T2N 1N4, Canada. *Some Remarks Concerning NUCOMP.*

A very important operation when performing arithmetic in quadratic number fields is that of multiplying two ideals and then reducing their product. For example, this operation is fundamental to the process of finding a reduced ideal equivalent to a large power of a given ideal. In 1988, Daniel Shanks described an algorithm which he called NUCOMP for performing this operation. The beauty of this algorithm is that it does not require the large intermediate numbers that are necessary in the usual multiplication, followed by reduction process. Although Shanks' version of NUCOMP was developed for imaginary quadratic fields, van der Poorten was able to show that it could also be used for real quadratic fields. In this talk, I will describe the most recent version of NUCOMP, and present an analysis of why and how well it works. (Received February 13, 2006)