1009-20-47   **Richard Z Goldstein*** (`richardg@math.albany.edu`), 1400 Washington Ave., Albany, NY 12222. *Potentially Positive Words in F(a,b).* Preliminary report.

Let F_n be the free group with basis $\{x_1, x_2, ..., x_n\}$. A word w in F_n is said to be potentially positive if there exists an automorphism Φ of F_n such that $\Phi(w)$ is a product of only the basis elements in F_n not their inverses. It is unknown in general if there exists an algorithm to determine whether or not a word w is potentially positive. This paper produces an algorithm in the special case that $n = 2$.