1107-05-457 **Dan Archdeacon*** (`dan.archdeacon@uvm.edu`). *Gauss sentences.* Preliminary report.

Let C be a curve immersed in the plane such that all multiple points involve two segments of the curve crossing transversally. Label the intersections $1 \leq i \leq n$. As we walk along C and record the intersections we get a cyclic word in which each $1 \leq i \leq n$ occurs exactly twice. Gauss asked: which do such double occurrence words come from an immersed curve? Gauss' problem was solved in the 1970's.

A Gauss sentence is a set of words collectively containing each $1 \leq i \leq n$ exactly twice. A collection of multiple curves simultaneously immersed in the plane give rise to a Gauss sentence: each curve generates a word. The problem now is to characterize Gauss sentences arising from multiple curves. We discuss various solutions to this problem. We also discuss a relation with the thrackle conjecture. (Received January 20, 2015)