962-01-147   **Harriet M Lord*** (`hlord@csupomona.edu`), Department of Mathematics, Cal Poly Pomona, 3801 W. Temple Ave., Pomona, CA 91768. *Surface Area.* Preliminary report.

Defining surface area for continuous surfaces has proven to be more difficult than defining length for continuous curves. In 1868 J. A. Serret defined the surface area to be the limit of inscribed polyhedra. However in 1880 H. A. Schwarz, in a letter to Genocchi showed that this limit is not independent of the sequence of inscribed polyhedra used. G. Peano published the same result in his course notes in 1882, while a month later Hermite published Schwarz's results in his course notes. It was in 1902 that H. Lebesgue published a solution to what he called the "surface area problem". Lebesgue's definition of surface area has been modified since then. In 1956 Cesari defined surface area in terms of sequences of inscribed polyhedra constructed via parametrizations, and studied the problem of determining when two different parametrizations yield the same value for the surface area. (Received August 09, 2000)