

1067-01-1344 **Erik R. Tou*** (etou@carthage.edu), 2001 Alford Park Dr., Kenosha, WI 53140. *Relative Accuracy of Quadrilateral Area Measurement in the Ancient World*. Preliminary report.

In the ancient world, geometers were concerned primarily with mensuration (the practice of accurate measurement), with the most obvious applications being in construction and surveying. One well-known formula from this time (appearing most famously in the Temple of Horus in Egypt, c. 100 BCE) purports to give the area of a general quadrilateral by taking the means of opposite pairs of sides and then multiplying the means. While this formula is erroneous, it produces highly accurate results when the quadrilateral is nearly rectangular. In this talk, we will examine the relative accuracy of this area formula, including: (1) the fact that it will never underestimate the true area, (2) how to find the interior angle that minimizes error, and (3) how significantly the error varies as the interior angle varies from the ideal. (Received September 20, 2010)