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Roger B. Nelsen* (nelsen@clark.edu), Department of Mathematical Sciences, Lewis and Clark College, Portland, OR 97219-7899. *Heron's Formula via Proofs Without Words*.

Heron's remarkable formula $K = \sqrt{s(s-a)(s-b)(s-c)}$ for the area K of a triangle with side lengths a , b , and c , and semiperimeter $s = (a + b + c)/2$, is considered to be one of the "great theorems of mathematics" in William Dunham's delightful book *Journey Through Genius* (John Wiley & Sons, 1990). Many proofs of Heron's formula by various methods—algebraic, geometric, trigonometric and function-theoretic—can be found in the journals of the MAA. In this talk we use "proofs without words" to establish two lemmas (which are of interest in their own right) which reduce the proof of Heron's formula to elementary algebra. We conclude with comments and a challenge about quadrilaterals. (Received June 09, 2000)