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Palfreyman, Andrew

Equable triangles – the general case.

SYMmetryplus 57, 5-7 (2015).

From the text: A shape was said to be equable in my last two articles if the value of its area is equal to the value of its perimeter and I was particularly interested in shapes that had integers for all their side lengths. In the previous article, however, we found that no equable isosceles triangle exists, although a nice example did exist with a base of 12 and equal sides being $7\frac{1}{2}$. We will now consider the general case for a triangle which has a slightly different approach to that in the last article. However, we will begin with Heron's formula again.

Classification: G40 G70 G30 F60
Keywords: equable shapes; equable triangles; Heronian triangles; integer side length; integer area; Herons's formula; Pythagorean triples; Diophantine equations; inequalities; case analysis; analytic geometry; plane geometry