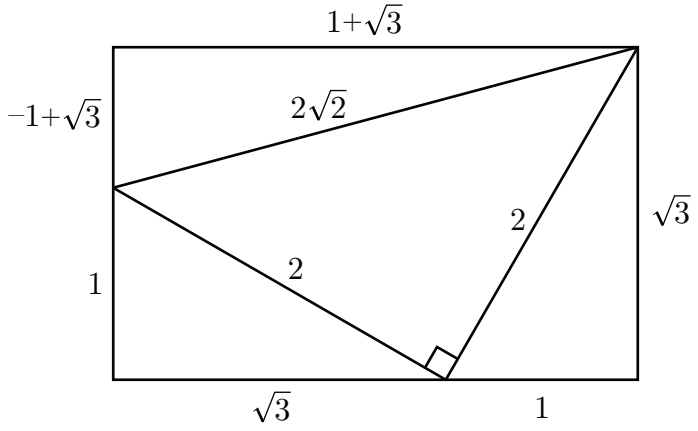

Ailles Rectangle

(pronounced ALES, like the drinks)

Notes:

- Pictured above is Doug Ailles' original rectangle[1].
- The rectangle permits one to readily solve for the side lengths in a 15–75–90 triangle.
- Every triangle depicted in the Ailles rectangle has:
  (1) rational angle measures (in degrees — equivalently rational multiples of π in radians) and
  (2) side lengths each containing at most one square root (rationals or quadratic irrationals).
- Every right triangle satisfying (1) and (2) is similar to one depicted in the Ailles rectangle[2] !

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[1] D.S. Ailles, *Triangles and trigonometry*, Mathematics Teacher **64** (1971) 562.

[2] J.S. Calcut, *Grade school triangles*, American Mathematical Monthly **117** (2010) 673–685; available at `http://www.oberlin.edu/faculty/jcalcut/papers.htm`.

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