

Two Block Incline

14 April 2019

Jim Stevenson

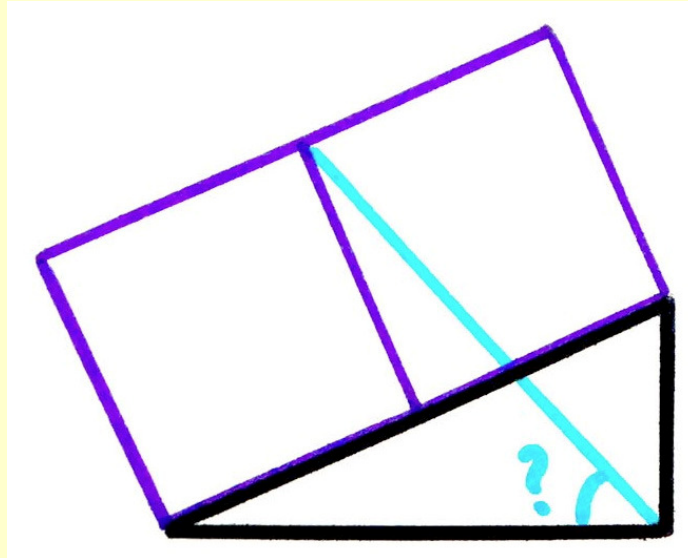
Since everyone by now who has any interest has gone directly to Catriona Shearer's Twitter account for geometric puzzles, I was not going to include any more. But this one with its one-step solution is too fine to ignore and belongs with the "5 Problem" as one of the most elegant.

Catriona Shearer @Cshearer41 Apr 4

9:11 AM - 4 Apr 2019

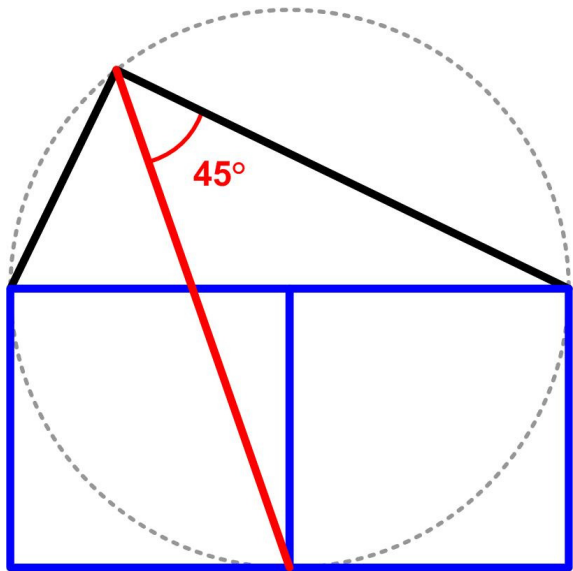
(<https://twitter.com/Cshearer41/status/1113836546799620097>)

Two squares sit on the hypotenuse of a right-angled triangle. What's the angle?



Solution

As usual, the problem seems to have too little information. Seeing a hypotenuse of length 2 immediately suggests half of an equilateral triangle with the vertical leg of length 1. But then you think are there any other right triangles with hypotenuse 2? And of course there are an infinite number. Just inscribe the right triangle in a semi-circle with radius 1. So what does the figure look like if you do that? And bingo! There is the solution (using the fact that an inscribed angle in a circle is one-half the corresponding central angle).



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