
Problem of the Week

Number One

January 26, 2015

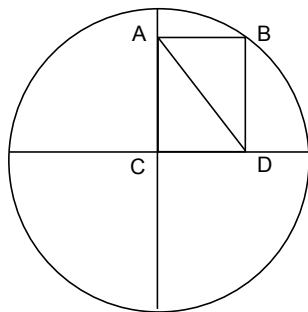
A physicist, a biologist and a mathematician are looking at an empty house. They see two dogs walk in, and some time later three dogs walk out. The physicist says, "There must have been an error in the initial measurement." The biologist says, "They must have reproduced." The mathematician says, "If one more dog goes into the house, then it will be empty."

Come to think of it, ever wonder how to cross a mosquito with a mountain climber? It's a trick question! Everyone knows you can't cross a vector with a scalar.

Those are jokes, of course. Now for something that is not a joke. Now for something that is *serious business*. Folks, as of today, Problem Of The Week returns for another semester! The theme for this term is:

GEOMETRY

That's right! An entire semester devoted to the subject that makes high school students realize there's something worse than algebra. So let's get this party started with a classic geometrical brainteaser:



The circle to the left has radius 5. Figure $ABCD$ is a rectangle. Find the length of segment AD .

*Submissions are due to Jason Rosenhouse by 5:00 on Friday, January 30. Solutions should be written on the back of an official POTW handout. Place your name, e-mail address, and the section numbers and professors of any math courses you are taking, in the **upper right corner** of the front of the page. One weekly winner will receive a five-dollar gift card from Starbucks. To be considered correct, your answer to the problem must be accompanied by a clear, concise explanation. Solutions will be posted at this website, by the Monday after the problem is due:*

<http://educ.jmu.edu/~rosenhjd/POTW/Spring15/homepage.html>