Problem of the Week
Number One
January 20, 2014

Welcome to another wacky and wild semester of Problem of the Week! You're about to be really happy you showed up, because this semester's theme is

Knights, Knaves, Normals, Werewolves
and Other Fanciful Creatures

That's right! A whole semester dedicated to the most endearing characters ever to populate fictional islands in logiical brainteasers.

We'll meet the normals and the werewolves later in the term. For now I will ask you to imagine that you are visiting an island on which all of the residents belong to exactly one of two tribes: the knights and the knaves. The two tribes are visually indistinguishable, meaning you cannot tell just from looking the tribe to which a person belongs. It turns out, though, that knights only make true statements, while knaves only make false statements.

This means that a sagacious tourist can often determine whether he is talking to knights or knaves simply by ferreting out the logical consequences of what people say. And that leads us to our first problem. A mere bagatelle, really. Just a warm-up exercise for the amusements that are to come.

You meet three people, whose names are Asimov, Buffy and Columbo. Asimov says, "All of us are knaves." Buffy then says, "Actually, exactly one of us is a knight." Which of the three are knights and which are knaves?

Have fun with that! When submitting your solution, please follow the directions on the back of this page.

Solutions are due to Jason Rosenhouse by 5:00 on Friday, January 24. Please write your solution clearly in the space below. 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. Please make sure that the answer to the problem is displayed clearly and prominently. ***Keep in mind, however, that to be considered correct, your answer to the problem must be accompanied by a clear, concise explanation that proves that your answer is the only one possible.*** *Problems are available at the bulletin board outside Roop 119, and also at the website:*

http://educ.jmu.edu/∼rosenhjd/POTW/Spring14/homepage.html