

MATH CHALLENGE PROBLEM

for March 2017

The Dance of the Knights and Knaves



Deep in the forest of the knights and knaves, you stumble on a peculiar sight: a large group of trolls is dancing in a circle. Every once in a while, all the trolls stop, each facing either clockwise or counterclockwise around the circle. They all point to the troll standing in front of them (who might or might not be facing them) and shout, “you are a knave!” Then every troll turns around, points to that troll, and shouts, “you are a knight!”

Of course, even in this bizarre ritual, knights always tell the truth and knaves always lie.

The Challenge: Assuming all dancing trolls are either knights or knaves, how many trolls could be dancing? Which numbers of trolls are possible, and which are impossible?

Submit solutions to Ross 2239G or oscar.levin@unco.edu by **Friday, March 31**.

The best solution will WIN A PRIZE!

Prizes include nifty Rubik’s style puzzle cubes, math puzzle books, math games, even a math coloring book. So submit your answer TODAY!