# Problem of the Week
Number Eight
October 28, 2013

This week's challenge involves the game depicted in the picture below. I shall present it precisely as Loyd did, while noting that his remarks about *Kugelspiel* should not be taken seriously. Please note that there are two possible solutions to this puzzle, and that the pins in the picture are numbered from 1 to 13, with 1 on the left and 13 on the right.
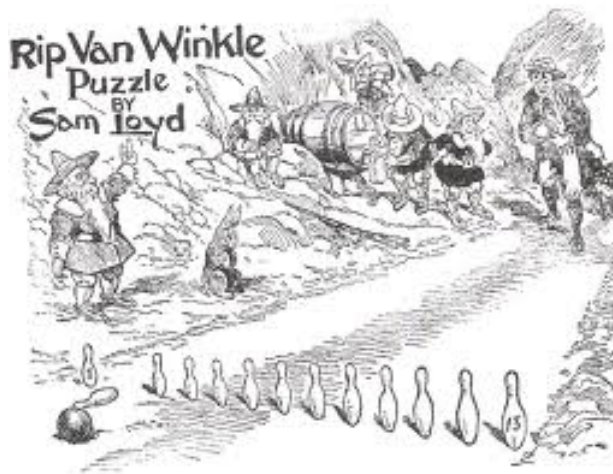
The old Dutch game of *Kugelspiel*, from which modern bowling is derived, used to be played with thirteen pins placed in a row. Only one or two (adjacent) pins could be knocked down by any single shot. The bowlers stood so close to the pins that it did not call for much skill to hit any single pin desired, or any two adjacaent ones. Players bowled alternately, one ball at a time, and the point of the game was to see who could knock down the last pin.

The little Man-of-the-Mountain, with whom Rip Van Winkle is playing this game, has just rolled a ball and knocked out pin No. 2. Rip has a choice of twenty-two different plays: any one of the twelve single pins, or any one of the ten open spots that will bring down two adjacent pins. What is Rip's best shot to win the game? It is assumed that both players can hit any pin or pair of pins they wish, and that there is the best possible play on both sides.

Solutions are due to Jason Rosenhouse by 5:00 on Friday, November 1. Please draw your solution clearly somewhere on an official POTW problem sheet. Place your name, e-mail address, and the section numbers and professors of any math courses you are taking, in theupper right corner of the page. One weekly winner will receive a five-dollar gift card from Starbucks. Winners will be drawn randomly from among the correct answers. Problems are available at the bulletin board outside Roop 119, and also at the website:

http://educ.jmu.edu/~rosenhjd/POTW/Fall13/homepage.html