

Teasers

For your recreational enjoyment here are a few teasers.

1. [Thanks to Andreas Tollaksen] Ten workers are producing 10-gram gold coins at the Mint. One of them is suspected of shaving a gram of gold from each coin for himself. How can the Mint discover who is the miscreant by a single weighing of coins?
2. At what time exactly after 1:00 is the minute hand of a clock on top of the hour hand?
3. How can you determine the thickness, without measuring, of a roll of kitchen paper, knowing only the length of the roll and the inside and outside diameters of the tube on which the paper is rolled?
4. In bowling how many different possible scores are there at the end of the fifth frame on the way to a 200 game? (You may assume, correctly, that a maximum score in any of the 10 frames is 30, and that a minimum score is zero, with all possible scores in between.)