Chapel Hill Math Circle
Intermediate Group (6-7)
March 26, 2016

These problems were translated from the book *33 Mathematical Problems: A Guide with Explanations* by Arturo Portnoy. It can be downloaded for free at Olimpiadas Matemáticas de Puerto Rico.

1. Warm-up: A goat eats all the grass in a plot of land in 4 days, a horse in 3 days, and a cow in 2 days. How long will it take all three together to clear the plot?

2. How many zeros are at the end of the number 100!?

3. We have a 9 L container and a 4 L container.
   a. How can we leave exactly 6 L in the larger container?

   b. Can we leave 3 L in any of them?

4. Bonus: Many people at a party shake their hands. Is the number of people who shook hands an odd number of times even or odd?