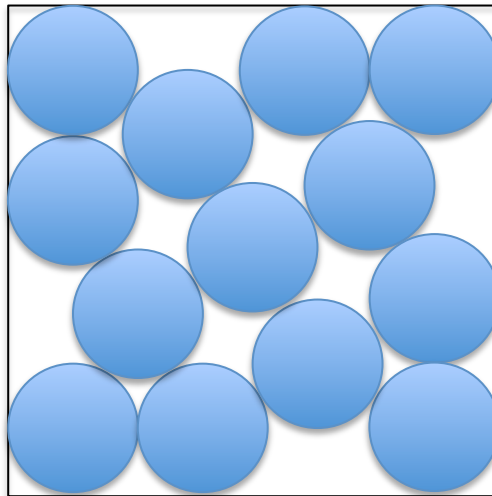


Math Circle 9/10/2016 Meeting: Warm-up problems

Problem 1. In the following multiplication problem, A, B, C, D, E are different one-digit numbers. Determine their values.

$$\begin{array}{r} A B C D E \\ \times 4 \\ \hline E D C B A \end{array}$$

Problem 2. Shown below is the densest possible packing of 13 circles into a square (they all touch each other). If the radius of a circle is 1, find the side length of the square.



Problem 3. Five different numbers are given. By computing all of the different sums of 2 numbers, we get the list $\{8,11,13,14,15,16,18,19,21\}$ where, possibly, some of the numbers in the list have occurred more than once. Find the 5 numbers.