

University of Washington Math Hour Open Olympiad, 2013
Grades 8-10

6. 1000 non-zero numbers are written around a circle and every other number is underlined. It happens that each underlined number is equal to the sum of its two neighbors and that each non-underlined number is equal to the product of its two neighbors. What could the sum of all the numbers written on the circle be?

7. A grasshopper is sitting at the edge of a circle of radius 3 inches. He can hop exactly 4 inches in any direction, as long as he stays within the circle. Which points inside the circle can the grasshopper reach if he can make as many jumps as he likes?

