

Week 64 (12/1/03)

Attracting bugs

N bugs are initially located at the vertices of a regular N -gon, whose sides have length ℓ . At a given moment, they all begin crawling with equal speeds in the clockwise direction, directly toward the adjacent bug. They continue to walk directly toward the adjacent bug, until they finally all meet at the center of the original N -gon. What is the total distance each bug travels? How many times does each bug spiral around the center?