



UNM-PNM STATEWIDE MATHEMATICS CONTEST LECTURE



Professor Alex Solynin
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Symmetry and Isoperimetric Inequalities

Among all simple closed plane curves of given length L , the circle of circumference L encloses the maximum area. Nowadays the isoperimetric problem is understood in a very broad sense where we fix a geometric parameter of a domain and try to optimize a given quantity dependent on the domain. Physical problems leading to isoperimetric problems include torsional rigidity, electrostatic capacity, vibrations (lowest fundamental frequency), black holes. The study of isoperimetric problems involves geometry, analysis and differential equations, and very often leads to a solution with a lot of symmetries. Professor Solynin is one of the world experts in isoperimetric problems.

Saturday, February 7, 2009
Woodward Hall Room 101, 10:00am.