SmartCo Olympiad
Category 4 (Grades 9–10-11)
Total questions: 35
Math Olympiad Syllabus

Section A: Geometry

A1 - Plane geometry	A2. Geometry - Solid Geometry
- Symmetry - Pythagorean theorem similarity - Area of simple plane figures - Angle calculations (parallel and normal angles, angles in a circle, angles in triangles and simple polygons) - Circles parabola - Rotation, translation, scaling point coordinates without computations - Simple regular polygons	- Spatial relationships - Cubes, prisms, pyramids - Spheres, cones, cylinders - Platonic solids - Volume - 3-d movement of one- and two-dimensional objects, i.e. knots, folding, etc.

Section B: Numbers Theory

- Number puzzles
- Simple usage of powers of numbers prime numbers
- Use of prime factorisation (low level)
- Using digits
- Number patterns
- Simple Diophantine equations
- Very simple modulo calculations, no modulo calculus

Section C: Algebra, Functions and Sequences

C1 - Functions, Sequences	C2. Algebra
- Interpreting simple graphs - Simple arithmetic and geometric sequences simple functional equations - Simple finite recursions	- Algebra addition, subtraction and multiplication of polynomials - Powers and roots - Equations, simple quadratic equations - Simple systems of linear equations - Simple inequalities; solutions with sets written as

Section D: Combinatorics, Probability Logic

D1 - Combinatorics and Probability	D2. Logic / Puzzles
- Simple combinatorics as for instance countable permutations - Simple probability without theoretical knowledge - Inclusion/exclusion principle	- Logic problems that can be solved in a limited number of steps or by analyzing a limited number of cases or hypotheses - Logical Puzzles