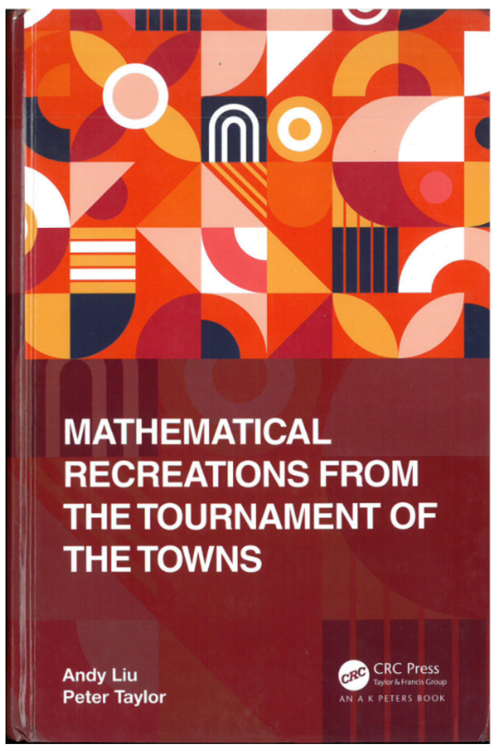
Professor Robert Dawson (Saint Mary's University)
Editor-in-Chief, CMS Notes

The Tournament of the Towns was first held in Moscow, Leningrad, and Riga in 1980. Since then it has spread to other towns and other countries. Until recently, several Canadian cities participated: I write this review in the hope that the Russian government will soon return to sanity, and such friendly competition may again be possible.

The Tournament was founded by the late Nikolay N. Konstantinov, as a less-elitist alternative to the International Math Olympiad. The papers are written locally, allowing as many students as wish to to participate. Junior and senior students write different papers. Within each age group, there are fall and spring sessions, each consisting of an easy ("O-level") paper and a harder ("A-level") paper two weeks later. There are thus eight five-question papers a year, of which one student can write up to four. While the same problem may appear as a hard question on the junior paper and a more lightly-weighted easy question on the senior paper, the contest generates about thirty problems per year. This book contains all the problems from the Tournament of the Towns from Fall 2007 to Spring 2021, and their solutions.

As a useful bonus, as well as the complete chronological listing, the book contains a number of suggested "highlight" sets. In Part I of the book are eighteen themed sets with a particularly recreational flavor; in part II are selections focusing on arithmetic, geometry, and combinatorics.

Tournament problems can be very difficult: the Senior A-level problems are often comparable with those on the IMO. They tend, however, to have more of the flavor of recreational mathematics than Olympiad problems do. Problems often involve wizards, knight, and dragons; and some problems involving a particularly counterintuitive result are hinted at by the introduction of that notorious teller of tall tales, Baron Münchausen! The solver may expect to make more use of parity and the Pigeonhole Principle than of Jensen's inequality or obscure triangle geometry.



By Andy Liu and Peter Taylor
CRC Press, Boca Raton, 2023
978-1-032-35292-3

There are occasional places where the wording of a problem is not entirely clear. For instance, in problem S.O.3 for 2010 we find:

Is it possible to cover the surface of a regular octahedron with several regular hexagons, without gaps or overlaps?

It is, but the hexagons must be interpreted as flexible, which is nowhere stated. (This is presumably not the fault of the editors, but how the question appeared in the English-language version of the Tournament.) Arguably it's a better problem this way, requiring a little lateral thinking!

On the other hand, problem C3-4 on page 45 seems to have an actual error:

Alice and Betty are sixteen, Carla is fifteen, Debra is fourteen, and Ellen is thirteen. They want to cross the river in a boat. No girl may be in the boat alone, and no two girls whose ages differ by more than 2 may be in the boat at the same time. Is this task possible?

As asked, the solution's almost trivial: Alice, Betty, Carla, and Debra cross, then Carla and Debra go back for Ellen. The given answer (requiring nine crossings) suggests that the question should have read "by two or more."

This book will be of interest to any moderately advanced math puzzler, and useful to anybody training for a math contest at the high school or university level. It should definitely be in every university and high school library, and on many private bookshelves. The online price is under C$75, so price should not be too much of an obstacle. (I've seen it discounted well below this price, though it doesn't seem to be so at the time of reviewing.)