

Mathematical Talent in the Munster Region

There is no shortage of mathematical talent in Munster as was witnessed at the **Limerick Mathematical Olympiad 2010**, which was held at UL on Thursday, 4 March 2010. Kieran Cooney from CBS Charleville was awarded first place with second place being achieved by Shane Kelly from Gaelcholáiste Luimnigh and third place being shared by Michael Hanrahan from St Joseph's Secondary School, Spanish Point, and Michael O'Donnell from CBS Charleville.

The Limerick Mathematical Olympiad was run, for the first time this year, as a preparation contest for the Irish Mathematical Olympiad, which takes place every year in late April or early May. The best students in the national olympiad qualify for the International Mathematical Olympiad (IMO), which will take place in Kazakhstan in July of this year. The IMO is the most prestigious mathematical contest for second level students in the world. The first IMO was held in 1959 in Romania with just seven countries participating. Since then, IMO has grown considerably with a record participation of 565 contestants from 104 countries in Germany last year.

Ireland has sent a team to the IMO every year since 1988, with most successful Irish participant being Fiachra Knox from Co. Meath, who received a silver medal in 2005 and is currently a Ph.D. student in mathematics at Birmingham University.

Limerick has its own claim to fame with Galin Ganchev, formerly from Castletroy College, who has participated four times in the IMO from 2005 to 2008, making him the only Irish student to qualify that many times for the Irish team.

Speaking on the competitive nature of this event Bernd Kreussler, Maths Lecturer in Mary Immaculate College, said *"In order to have any chance of scoring even a few marks at the two four-and-a-half-hour exams at the IMO, students have to undertake an intense training course which focuses on problem solving. This is very much like the preparation for a highly competitive international sports event. Unfortunately, the development of mathematical problem solving skills is not very well catered for in our school system. If such skills had the same reputation and support as activities like rugby and GAA there would certainly be more Irish students bringing home a medal."*

Nevertheless, every year a small group of talented, highly motivated and interested students join such a course at one of the five training centres at UL, NUI Galway, UCC, NUI Maynooth and UCD. These courses deal with the four classical subjects traditionally covered in mathematical olympiads: algebra, combinatorics, geometry and number theory. The trainers at these centres are volunteers who carry out this work for free in their spare time. At the Limerick centre there are four mathematicians from UL and one from Mary Immaculate College involved in the training. These training sessions take place at UL every Thursday between 7 pm and 10 pm during the months of January until April. Talented and interested secondary school students of any age are always very welcome. Teachers, parents or relatives who are aware of a student with exceptional talent in mathematics should contact Gordon Lessells (UL) by email at Gordon.Lessells@ul.ie or by phone on 061-202018.

Interested students can find more information at www.irmo.ie, which is the website of the Irish Mathematical Olympiad.

Participation in the IMO is cost free for the contestants. The host country takes care of accommodation, meals and local transportation for all participants. In the last number of years, the cost of the transport from Ireland to the host country was covered by the Department of Education and Science. However, due to the recession and the high costs of

travel to Kazakhstan, the subvention obtained from the government this year is not sufficient to send a full team of six Irish students to the IMO in Kazakhstan without obtaining additional sponsorship. Hence the trainers at all five Irish centres would greatly welcome sponsors willing to help, so that the continuous efforts of the best of the mathematically talented Irish secondary school students could be honoured with participation in the IMO 2010.

To get a taste of the type of problem which appears in mathematical olympiads, here is problem 3 from the Limerick Mathematical Olympiad 2010.

A 7×7 square table is to be tiled with 10 straight tetrominos and a 3×3 square. Find all possible positions of the 3×3 square that enable the 7×7 table to be fully tiled.

