Hang Lung Mathematics Awards

The Hang Lung Mathematics Awards is a biennial mathematics research competition for secondary school students in Hong Kong. Founded in 2004 by Mr. Ronnie C. Chan, Chairman of Hang Lung Properties, and world-renowned mathematician Professor Shing-Tung Yau, 1982 Fields Medalist and recipient of the 2010 Wolf Prize in Mathematics, the purpose of the competition is to stimulate creativity and to encourage intellectual discovery in mathematics and science among secondary school students. Schools are invited to form teams (up to five students in one team) and, under the supervision of a lead teacher, the teams design and carry out a mathematics research project. Each team submits a project report summarizing the findings, which is evaluated by a Scientific Committee in a multi-step process similar to a publication in a scientific journal. Shortlisted teams are then invited to participate in an oral defense before members of the Scientific Committee. This final stage is modeled after a doctoral dissertation defense and is comprised of two parts: a public presentation of the research project, followed by a closed-door inquiry. The winners of the Hang Lung Mathematics Awards will be decided after the oral defense, and the results will be announced at the awards presentation ceremony the following day.

The Hang Lung Mathematics Awards is co-organized by Hang Lung Properties, the Institute of Mathematical Sciences and the Department of Mathematics at The Chinese University of Hong Kong (CUHK). Hang Lung Properties donates over HK$2 million to each competition, of which HK$1 million is set aside for monetary prizes, and the remainder for educational resources, guidance and mentoring, the assessment process, and the administration of the competition. The Department of Mathematics handles the administrative, operational, and educational aspects of the competition.

Up to eight awards will be presented to the mathematics research projects that meet the highest academic standards in terms of methodology, originality, research, and scholarship: a Gold Award of HK$400,000; a Silver Award of HK$200,000; a Bronze Award of HK$100,000; and up to five Honorable Mentions, each worth HK$60,000.

Each winning student and teacher will receive a crystal trophy, a certificate, and a monetary prize; the school will receive a crystal trophy and a development award. The monetary prizes include a Student Education Award to be shared equally among team members and applied towards their university studies; a Teacher Leadership Award for the supervising teacher; and a School Development Award to promote mathematics education at the school. Each winning school may also nominate a teacher to receive a Tuition Scholarship from CUHK to earn an MSc in Mathematics at the university.

Etched in the crystal trophy is a representation of a Calabi-Yau manifold. Named after mathematicians Eugenio Calabi and Shing-Tung Yau, Calabi-Yau manifolds form a special class of surfaces used in algebraic geometry and theoretical physics. They are spaces with multiple supersymmetries. In modern theory, the universe is a ten-dimensional space consisting of a four-dimensional space-time, together with a six-dimensional Calabi-Yau manifold curled up everywhere every moment.