



The Problem with Problem Solving

Speaker: Prof. Andy Liu

There are two stages in solving a problem. The first stage is to convince yourself that you have solved the problem. The second stage is to convince other people that you have solved the problem. The first stage is the creative one and is indicative of how mathematics is actually done. The second stage is more formal and often has little in common with the first stage, but ironically it is how mathematics is usually communicated and taught.

Emphasizing the second stage over the first has significantly negative consequences. The most difficult thing about solving a problem is getting started. Where do ideas come from? Unfortunately, by only reading solutions by other people is ineffective because other people tend to write only about the second stage of problem solving. One must learn how to conduct informal explorations.

In this talk, Prof. Liu will illustrate with examples why more attention needs to be paid to the first stage of problem solving. He will demonstrate to us the art of problem solving, which is making something out of nothing.

Professor Andy Liu teaches at the University of Alberta in Canada, from which he obtained a Ph.D. in Mathematics and a graduate diploma in elementary education, thus becoming perhaps the only person officially qualified to teach mathematics from kindergarten to graduate school. Prof Liu's contribution in Mathematics education is recognized internationally. He has also served as team leader of the Canadian IMO team, deputy leader of the USA IMO team and on the IMO problem committee. He has won awards such as

- ✧ *The PIMS Education Prize;*
- ✧ *The Deborah and Franklin Teppo-Haimo Award from the Mathematical Association of America;*
- ✧ *The Adrienne Poulot Award from the Canadian Mathematical Society;*
- ✧ *The 3M National Teaching Fellowship;*
- ✧ *David Hilbert International award from the World Federation of Mathematics Competitions;*
- ✧ *The Rutherford Award for Excellence in Undergraduate Teaching given from the University of Alberta;*
- ✧ *Canadian University Professor of the Year in 1998.*



Talk Details

- Date: 18 August 2011 (Thursday)
Time: 3:30pm to 5:00pm (Please arrive at 3:15pm for registration)
Venue: **Lecture Theatre, West Block**, Kowloon Tong Education Services Centre, 19 Suffolk Rd., Kowloon Tong
Language: Cantonese
Audience: **All Hong Kong Secondary Students (F.1 to F.7/G7 to G12)**
Application: Please apply **ONLINE**

Application Deadline: 15 August 2011 (Monday)

First-come, first-served basis. For enquiries, please contact Mr. Li at 3698 3498 or Ms. Yip at 3698 3500.