

# Preface

The first time China sent a team to IMO was in 1985. At the time, two students were sent to take part in the 26th IMO. Since 1986, China always sent a team of 6 students to IMO except in 1998 when it was held in Taiwan. So far up to 2008, China has achieved the number one ranking in team effort 14 times. A great majority of students received gold medals. The fact that China obtained such encouraging result is due to, on one hand, Chinese students' hard working and perseverance, and on the other hand, the effort of teachers in schools and the training offered by national coaches. As we believe, it is also a result of the educational system in China, in particular, the emphasis on training of basic skills in science education.

The materials of this book come from a series of two books (in Chinese) on *Forward to IMO: a collection of mathematical Olympiad problems (2007 – 2008)*. It is a collection of problems and solutions of the major mathematical competitions in China. It provides a glimpse of how the China national team is selected and formed. First, there is the China Mathematical Competition, a national event. It is held on the second Sunday of October every year. Through the competition, about 150 students are selected to join the China Mathematical Olympiad (commonly known as the winter camp), or in short CMO, in

January of the second year. CMO lasts for five days. Both the type and the difficulty of the problems match those of IMO. Similarly, the student contestants are requested to solve three problems every day in 4.5 hours. From CMO about 20 to 30 students are selected to form a national training team. The training takes place for two weeks in the month of March every year. After six to eight tests, plus two qualifying examinations, six students are finally selected to form the national team, taking part in IMO in July of that year.

In view of the differences in education, culture and economy of West China in comparison with East China, mathematical competitions in West China did not develop as fast as in the east. In order to promote the activity of mathematical competition, and to upgrade the level of mathematical competition, starting from 2001 China Mathematical Olympiad Committee conducted the China Western Mathematical Olympiad. The top two winners will be admitted to the national training team. Through the China Western Mathematical Olympiad, there have been two students entering the national team and receiving gold medals for their performance at IMO.

So far since 1986, the China team has never had a female student. In order to encourage more female students participating in mathematical competitions, starting from 2002 China Mathematical Olympiad Committee conducted the China Girls' mathematical Olympiad. Again, the top two winners will be admitted directly into the national training team. In 2007, the first girl who was winner of China Girls' mathematical Olympiad was selected to enter the 2008 China national team and won a gold medal of the 49th IMO.

The authors of this book are coaches of the MO Chinese national team. They are Xiong Bin, Li Shenghong, Leng Gangsong, Wu Jianping, Chen Yonggao, Wang Jianwei, Li Weigu, Yu Hongbing, Zhu Huawei, Feng Zhigang, Liu Shixiong, Zhang Sihu, and Zheng Chongyi. Those who took part in the translation work are Xiong Bin, Feng Zhigang, Wang Shanping, Zheng Chongyi, and Zhao Yingting. We are grateful to Qiu Zhonghu, Wang Jie, Wu Jianping, and Pan Chengbiao for their guidance and assistance to authors. We are grateful to Ni Ming of East China Normal University Press. Their effort has helped make our job easier. We are also grateful to Zhang Ji of World Scientific Publishing for her hard work leading to the final publication of the book.

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