

Preface

The first time China sent a team to IMO was in 1985. At that time, two students were sent to take part in the 26th IMO. Since 1986, China has always sent a team of 6 students to IMO except in 1998 when it was held in Taiwan. So far (up to 2006), China has achieved the number one ranking in team effort for 13 times. A great majority of students have received gold medals. The fact that China achieved 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 four books (in Chinese) on *Forward to IMO: a collection of mathematical Olympiad problems* (2003 – 2006). It is a collection of problems and solutions of the major mathematical competitions in China, which provides a glimpse on how the China national team is selected and formed. First, it is the China Mathematical Competition, a national event, which is held on the second Sunday of October every year. Through the competition, about 120 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, they solve three problems every day in four and half hours. From CMO, about 20 to 30 students are selected to form a national training team. The training lasts for two weeks in March every year. After six to eight tests, plus two qualifying

examinations, six students are finally selected to form the national team, to take part in IMO in July that year.

Because of the differences in education, culture and economy of West China in comparison with East China, mathematical competitions in the west did not develop as fast as in the east. In order to promote the activity of mathematical competition there, China Mathematical Olympiad Committee conducted the China Western Mathematical Olympiad from 2001. The top two winners will be admitted to the national training team. Through the China Western Mathematical Olympiad, there have been two students who entered the national team and received Gold Medals at IMO.

Since 1986, the china team has never had a female student. In order to encourage more female students to participate in the mathematical competition, 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.

The authors of this book are coaches of the China national team. They are Xiong Bin, Li Shenghong, Chen Yonggao, Leng Gangsong, Wang Jianwei, Li Weigu, Zhu Huawei, Feng Zhigang, Wang Haiming, Xu Wenbin, Tao Pingshen, and Zheng Chongyi. Those who took part in the translation work are Xiong Bin, Feng Zhigang, Ma Guoxuan, Lin Lei, Wang Shanping, Zheng Chongyi, and Hao Lili. 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 and Xu Jin 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.

Authors
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