

# NZMOC January Camp Selection Problems

## Instructions

These problems will be used by the NZMOC to select students for its International Mathematical Olympiad Training Camp to be held in Christchurch between the 10th and 16th of January 2010. Only students who attend this camp are eligible for selection to represent New Zealand at the International Mathematical Olympiad (IMO) to be held in Kazakhstan in July 2010. At this Camp the New Zealand squad will be selected for the Asia-Pacific Olympiad, and other international competitions, and candidates will be chosen to continue to work in the training program prior to selection for the NZ team for the IMO.

There are two sets of problems: junior problems and senior problems.

- If you are currently in year 12, **or** you have attended a January camp previously, then you may **only** attempt the senior problems.
- If you are currently in year 11 or below **and** you have never previously attended a January camp, then you may attempt **both** sets of problems (and your results from both sets will be taken into account in the selection process).

General instructions:

- Calculators and computers should not be used to assist in solving these problems.
- Use of the internet to assist in solving the problems is also forbidden.
- A reasoned argument should be given for your answer to each question.
- All solutions must be entirely your own work. You may not work on the problems for more than 10 days.
- We do not expect many, if any, perfect submissions. So, please submit all the solutions and partial solutions that you can find.

Students submitting solutions should be intending to remain in school in 2010 and should also hold New Zealand Passports or have New Zealand Resident status. To be eligible for the 2010 IMO you must have been born on or after July 21, 1990 and must not be formally enrolled in a University or similar institution in 2010.

Students will be notified whether or not they have been selected for the Camp by the end of November. Cost of this camp is \$360, which includes domestic airfares etc as some sponsorship is available.

Solutions along with a completed Student Registration Form should be sent to:

Chris Tuffley  
Institute of Fundamental Sciences  
Massey University  
Private Bag 11 222  
Palmerston North 4442

**Arriving no later than 21st October 2009**

If you have any questions, please contact Chris Tuffley (06) 356-9099 Ext 3573  
[C.Tuffley@massey.ac.nz](mailto:C.Tuffley@massey.ac.nz)

Good luck!

# Registration Form

**Name** \_\_\_\_\_  
**Male/Female?** \_\_\_\_\_  
**School year level in 2009** \_\_\_\_\_  
**Home Address** \_\_\_\_\_

\_\_\_\_\_  
**Email** \_\_\_\_\_  
**Home phone number** \_\_\_\_\_  
**School** \_\_\_\_\_  
**School Address** \_\_\_\_\_

\_\_\_\_\_  
**Principal** \_\_\_\_\_  
**HOD Math** \_\_\_\_\_

Do you intend to take part in the camp selection problems for any other Olympiad camp?

If so, and if selected, which camp would you prefer to attend?

Have you put your name forward for a Science camp or any other camp in January?

Are there any criminal charges, or pending criminal charges against you?


Some conditions are attached to camp selection. You must be:

- Born on or after 21 July 1990
- Studying in 2010 at a recognised secondary school in NZ,
- Available in July 2010 to represent NZ overseas as part of the NZIMO team if selected.
- A NZ citizen or hold NZ resident status.

I satisfy these requirements, have worked on the questions for not more than 10 days without assistance from anyone else, and have read, understood and followed the instructions for the January camp selection problems. I agree to being contacted through the e-mail address I have supplied.

Signature:

Date:

\_\_\_\_\_

\_\_\_\_\_

Attach this registration form to your solutions and send to:

Chris Tuffley  
Institute of Fundamental Sciences  
Massey University  
Private Bag 11 222  
Palmerston North 4442

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