Auckland Mathematics Association

NEWSLETTER

Term 4, 2004

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In This Issue

President's Report

I hope that you had a good holiday break. These days the final term seems to give very little time to prepare the students for the final examinations in a few weeks. Here's hoping that it all goes well for this first cohort of students to go through the full implementation of NCEA.

The major professional development opportunity for this term is the Statistics Day to be held at Tamaki campus on Tuesday November 16. Our tertiary colleagues have organised a day that promises to be interesting, useful and informative. We hope to see some of you there.

If you have requests for professional development in 2005 that we may be able to organise then please contact Janice. The planning for this begins shortly.

2005 is NZAMT conference year. The conference will be held in Christchurch in the September holidays. Note that this is a change from the July holidays when the previous conferences were held. It is intended that the September time will become the norm. Planning for the Auckland conference in September 2007 is in its early stages.

If you are interested in professional development over the summer holidays then consider putting yourself forward to NZAMT for the assessment task writing workshop to be held in Christchurch in the 3rd week of January 2005 - travel and accommodation expenses are paid. Contact Janice either at the office or by email and she will put you in touch with the right people.

Congratulations to Jan Wallace – our Auckland advisor and AMA executive member. Jan is about to undertake a career change. She is to become the vicar of Pukekohe at the end of this year and so we wish her well for this exciting change to her life. It is true that Mathematics takes you in many different directions.

It seems early but already there are Christmas trees in the shops. I wish you all a very Happy Christmas and a good summer holiday. Here's hoping the weather improves.

Julie Saikkonen

Trip to Korea September 11- 27 2004

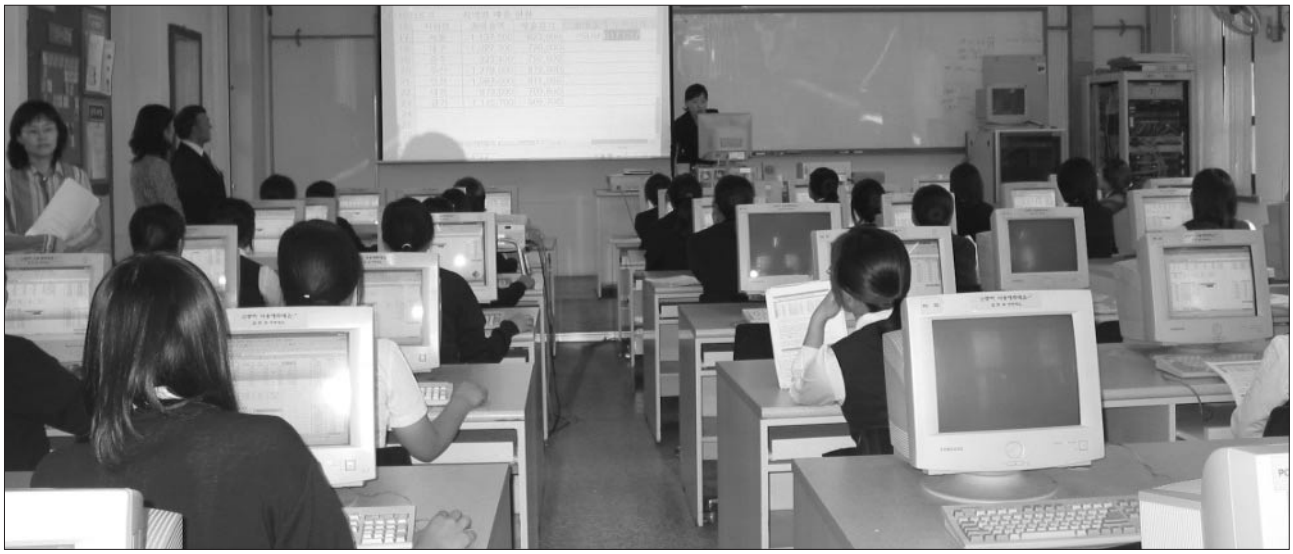
By Gillian Frankcom

Back in the middle of the winter the people from ACENZ, the Association of Colleges of Education in New Zealand, asked the four Colleges of Education each to find 3 people to go on a fact-finding trip to Seoul, Korea. Dunedin, Christchurch, Wellington and Auckland all obliged with a primary person, a secondary teacher or advisor, and a teacher-education person. We all met up in Wellington on the 24th August and were briefed by Graeme Oldershaw and his team.

Following on from visits to New Zealand by teachers of English from Seoul Metropolitan Office of Education (SMOE), and two delegations from New Zealand to Seoul, including Hon Trevor Mallard and Graeme's team, this delegation's aim was to consolidate and build on the growing professional relationship between the participating institutions.

The Auckland Team were Lynne Peterson from Dominion Road School, Jan Wallace from Team Solutions and me, from what was then Auckland College of Education. We met up at Auckland Airport with the rest of the people and headed off into Korea's hot and humid climate. With the purpose of the visit in the forefront of our minds, that we have the time and opportunity to study the teaching of mathematics in Korea, we were also keen to sample some of the culture.

Although we stayed in a hotel at the beginning and end of the trip, the majority of our time was spend in a Korean home stay, with a maths teacher from Seoul. This was a highlight of the trip, living and eating with the family, and



spending time tripping round Seoul with them at the weekend in the middle. We were spread around the city and had to use the extensive underground system to get into the centre each morning for our trip to whatever educational establishment we were visiting that day. The first day we faced with trepidation, but once we understood how the system worked, it was very easily colour-coded, then we were able to safely travel all over the place.

Generally speaking we found many similarities and stark differences in the two countries education systems. Similarities were most evident in that children spent the same number of years at school, there is a National Curriculum, teacher remuneration was comparable to ours, and teacher education lasted for 4 years.

The differences were mainly to be found in the attitude that the whole country has to education. It is highly prized, as the society is very competitive, so to succeed it was vitally important to attend a top university. And to get to one of those, students had to be highly motivated to score very highly on the end of school test which had a large emphasis on mathematics. Schools operate a five and a half day week, and over 70% of students go to further schooling after school, either in the crammer-academies, or to private tutorials. These tutorials and extra schooling did not support what the student is currently working on in normal class but advanced them a whole level. Teachers were also sure that their simple number system made numeracy easier to acquire. Numbers from 1 to 9 are single syllable and there are no "pet" names like twelve to muddy the waters.

As a group we are aware of the difficulties of making sweeping generalisations from such a small number of schools and university visits. But we also talked to many Korean teachers who confirmed these findings. Our own experience of seeing how the children within our home stay families worked until very late into the night showed us that children spent a lot more time on maths than New Zealand children generally do. Within their five and half days at school the teaching of maths is given more time than say most other areas, besides Science and Korean.

Teacher education takes place mostly in the universities and the teaching of content takes place alongside teaching of pedagogy. For instance the typical primary student teacher has already had to continue maths up to the equivalent of year 13, which is vastly different from what happens here in New Zealand. The secondary student teacher had to opt for content and pedagogy together for 4 years, not for them the degree and then diploma route. We saw no older students, nobody retraining, and nobody coming into teaching after completing other careers. There just did not seem to be a need for those routes, though we concede that there might have been other institutions offering that pathway. After training students received a licence to teach but then had to pass a stiff test of suitability to teach. This 3 hour examination which had both content and pedagogy throughout was combined with an interview to check on the suitability of a candidate for teaching. Of the year cohort only 20% were expected to pass this exam and get a job. The ones who failed had to try again for the test, or go and do something else. Teaching is highly valued by prospective teachers because it represents secure employment with a good pension after 25 years.

All classrooms have multi-media presentation capability with a large screen TV and/or a data projector with a built in desk computer. These were provided by SMOE and the up-keep and up-dating of the computers was SMOE's responsibility.

One other interesting difference is the on-going professional development available to teachers. Indeed it was compulsory to attend courses at SETI (Seoul Education Training Institute) if teachers wished to progress up the basic grades and from teacher to management status.

My personal reflections on why Korea have scored so highly on the TIMSS (second to Japan in Year 9 for example) and why they continue to excel in other world-wide competitions such as the Maths Olympiad is the sheer amount of time that students spend on maths. The Korean educational system did not view their high placing as such a wonderful thing. In the attitude survey which accompanied the reporting to countries, Korea learnt that their student's attitude to mathematics was very negative, and they set about improving that attitude. Their National Curriculum has huge parallels to ours. They emphasise the constructivist nature of teaching. The processes and the ability to think are highly valued. It remains to be seen if this change of emphasis leads to happier children or a different result in between country comparisons.

Y13 (LEVEL 3) STATISTICS & MODELLING WORKSHOP - Tuesday 16 November 2004

Y13 Statistics & Modelling Workshop, Y13 Stats day in short, has become an annual event that those of us who teach Y13 Statistics look forward to each year. This year we had 125 teachers from 68 schools attending.

Y13 Stats day seems to me as a day useful not merely for sharing or gathering information but more for exploring the meaningful and accurate delivery of the curriculum content. This is largely due to those who have been organising the event, particularly the University of Auckland Statistics department staff. For secondary school teachers, gaining assurance that the knowledge and skills we are passing on to our students is correct and useful for their future studies is as important as achieving good results in examinations. For this purpose, attending Y13 Stats day is extremely beneficial, as it can provide us with information and suggestions as well as giving opportunities to seek advice directly from the Statistics department.

Among the valuable sessions prepared for us throughout the day, the session on internally assessed standards was the centre of our attention. This year, in addition to the implementation of NCEA level 3 we also introduced a new topic, "Complete a Statistical Investigation involving Bi-Variate Data" (Achievement standard 3.5). We all valued some assurance or clarification on what we had done for the internal assessments, particularly on this standard. By sharing our experiences and exchanging opinions, we all gained further insight in the way we handle the internals.

For our school, it was encouraging to know that many other schools had administered the 3.5 standard which included a portion to be done under test conditions. We chose to do this this way because, despite the exemplar indicating the use of an assignment, we were concerned about the authenticity of students' work if they took it home to complete. On the other hand we were a bit concerned that we could end up giving our students a harder assessment than the national average by choosing to do so. At this stage it is premature to make a judgment on what is right or wrong to do, but having been able to voice our concern and receive feedback was definitely a worthwhile opportunity. This would be a step toward the better implementation of the standard.

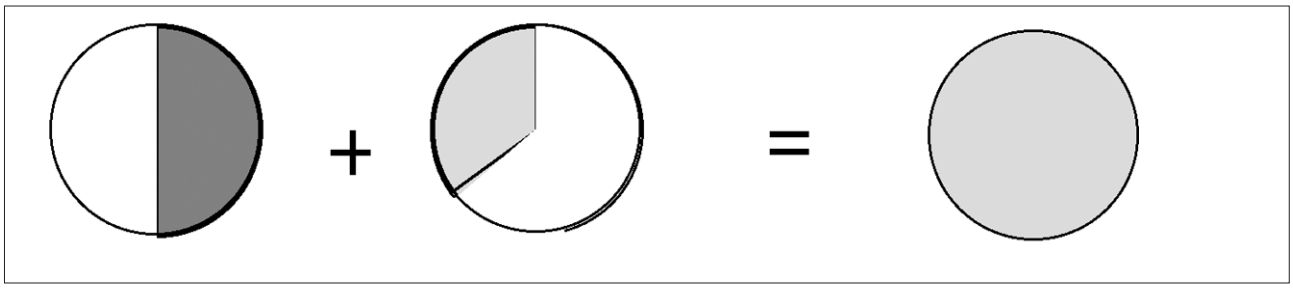
We have just received the information on R2 value from Matt Regan through e-mail. This is the reply that he kindly promised to us in response to our inquiry during the discussion session. Most of us felt that it was difficult to find suitable data sets for assessments in general. The Online Survey Generator which was introduced through the Computer Laboratory session could be used to generate data sets that are more meaningful for students, not just for Level 3 Statistics but even for Level 1 and 2 assessments. Quick and clear tips on teaching Conditional Probability and demonstrating the effective use of PowerPoint presentations were prepared by Ross Parsonage and Rachel Cunliffe.

I cannot list all the assistance and resources we have been given. I am grateful for the generosity of those people who contributed to this day. Furthermore, I'd like to thank those schools that shared their experiences by openly presenting their assessments to us. It was a very worthwhile day.

Yoko Raike - Westlake Girls High School

Hands on Mathematics From Jim Hogan in Waikato

I had often wondered why a lot of students responded with 2/5 as the answer to 1/2 plus a 1/3. It dawned on me one day that the students were not seeing 1/2 as a half or 1/3 as a third but quite convinced that there were 4 numbers, a 1, another 1, a 2 and a 3. All distinct and all independent.



They were thinking of them as whole numbers. A numeracy workshop reminded me of this and suggested a solution. These students were still thinking in whole numbers and had not developed any real understanding of fractions.

The solution...spend time developing what a half, and a third mean and then add them using materials so that it is plainly obvious that the answer is a bit bigger than either of them. The diagram models this idea. Compare to 2/5. The subsequent student discussion is often a very rewarding experience for teacher and student alike.

Ideas for the numeracy activities can be found on the NZMaths website. www.nzmaths.org.nz

Check out the new AMA website at
www.stat.auckland.ac.nz/~ama
for information on conferences and workshops, newsletters and other upcoming events.

Our thanks to Matt Regan and Ross Parsonage of the Statistics Department at the University of Auckland for creating the AMA website.

www.stat.auckland.ac.nz/~ama

Casio Mathex Prizewinners
PUBLICITY MOTIF 2004

Best Overall Winner

Peter Tchekourov Pakuranga College

Year 7

!st Place	Guangyu Chen St Heliers School
2nd Place	Hariet Lees St Cuthbert's College
3rd Place	Risha Patel Farm Cove Intermediate

Year 8

1st Place	Georgia Crosson St Cuthbert's College
2nd Place	Jagdeep Singh Farm Cove Intermediate
3rd Place	Imogen Cahill St Cuthbert's College

Year 9

1st Place	Peter Tchekourov Pakuranga College
2nd Place	Danielle Pollock St Cuthbert's College
3rd Place	Anthea Du Epsom Girls Grammar

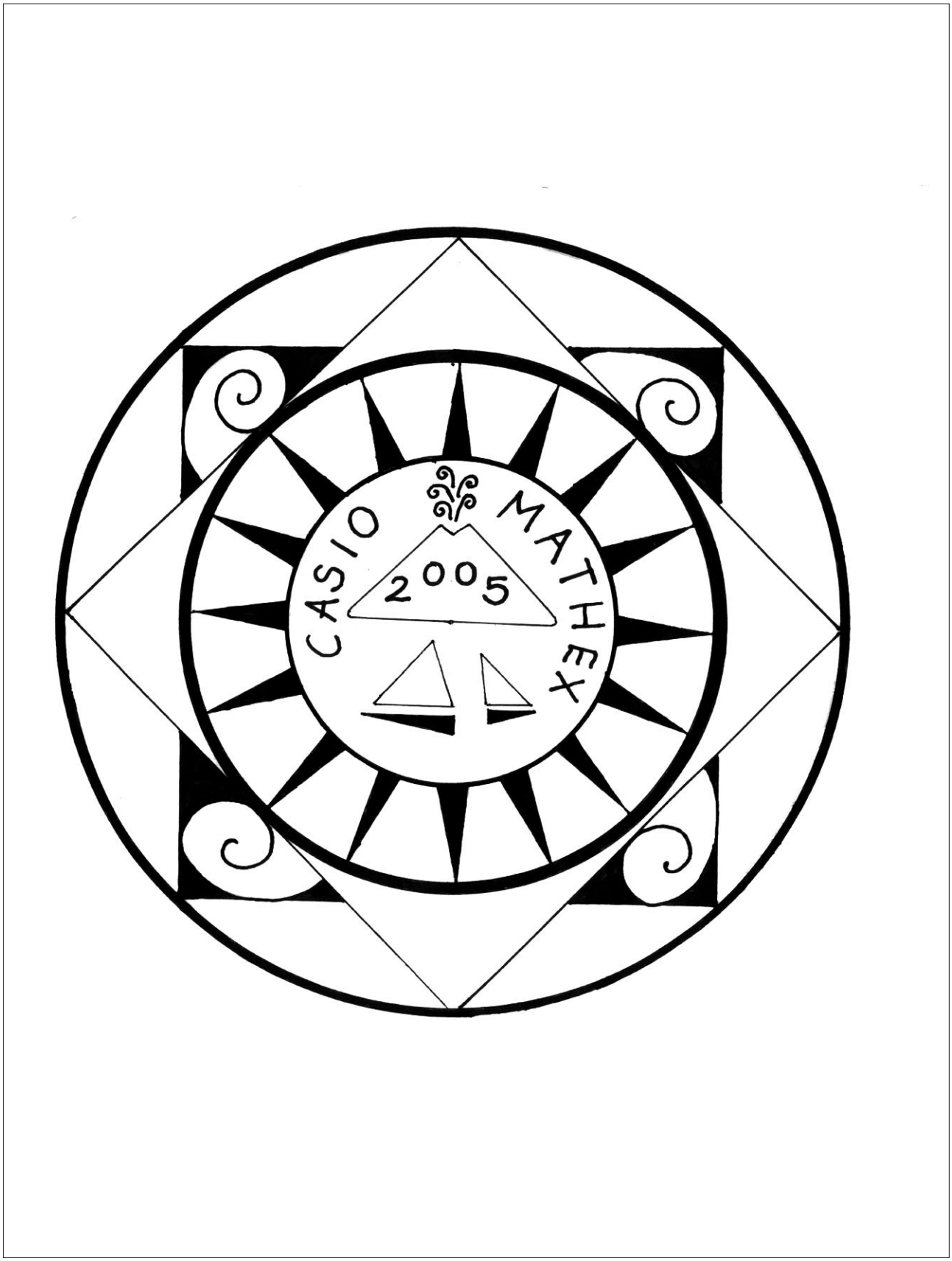
Year 10

1st Place	Nicole Chinn Pakuranga College
2nd Place	Serena Walker Tuakau College
3rd Place	Maria Nenarokova Westlake Girls High School

Year 7 Winners

1st Place: *Guangyu Chen - St Heliers School*

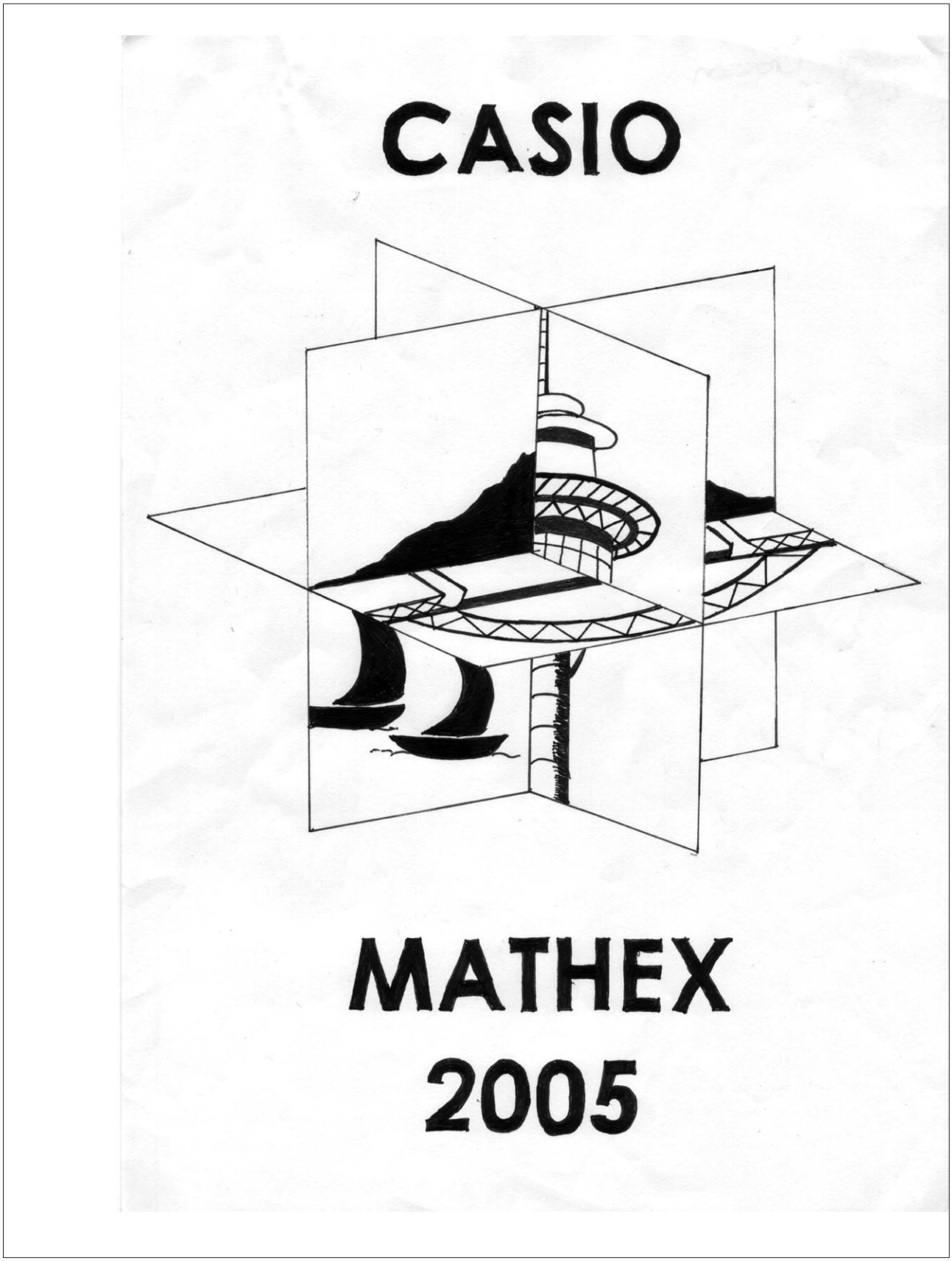
2nd Place: *Hariet Lees - St Cuthbert's College*



3rd Place: *Risha Patel - Farm Cove Intermediate*

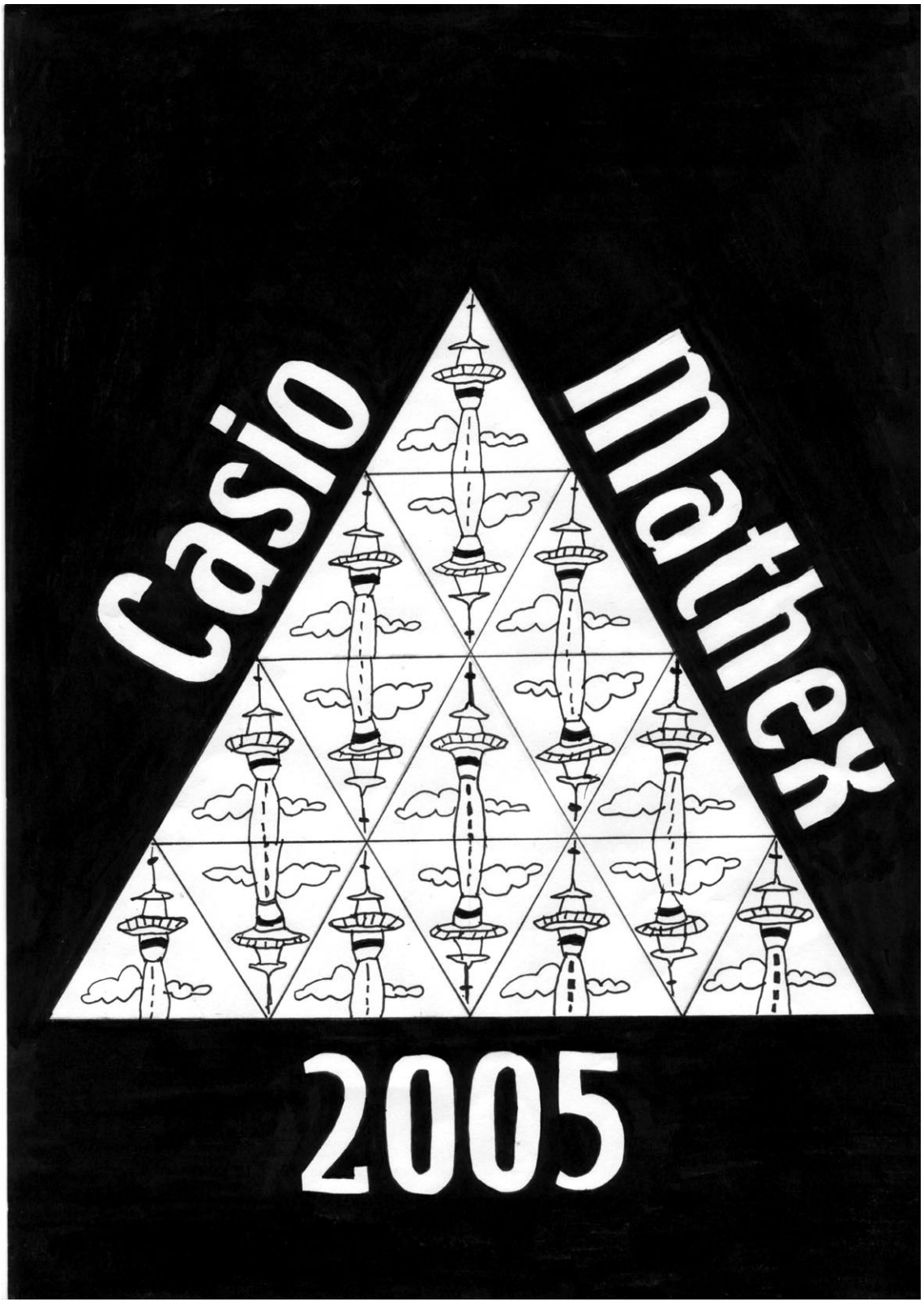
Year 8 Winners

1st Place: *Georgia Crosson - St Cuthbert's College*



2nd Place: *Jagdeep Singh - Farm Cove Intermediate*

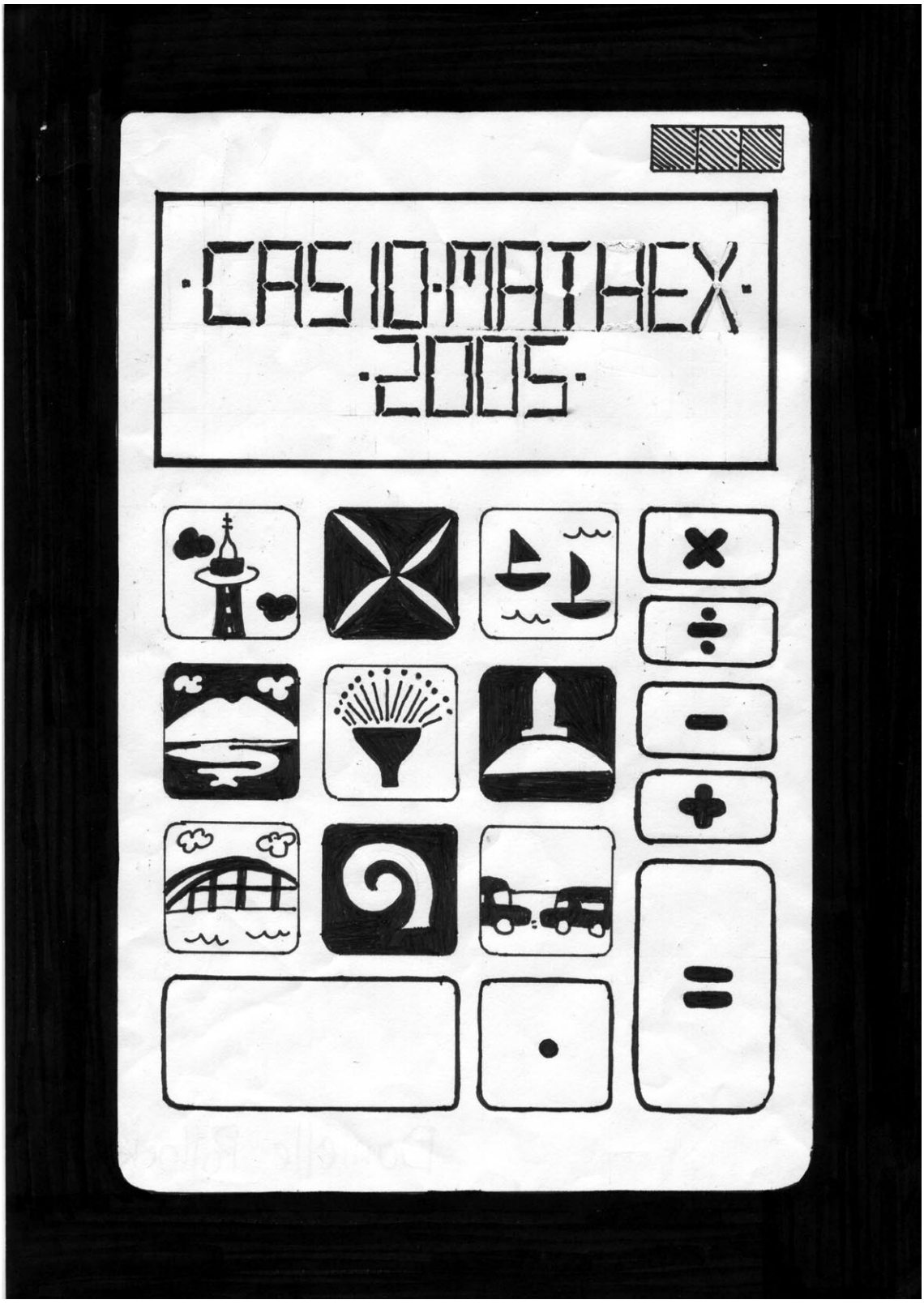
3rd Place: *Imogen Cahill - St Cuthbert's College*



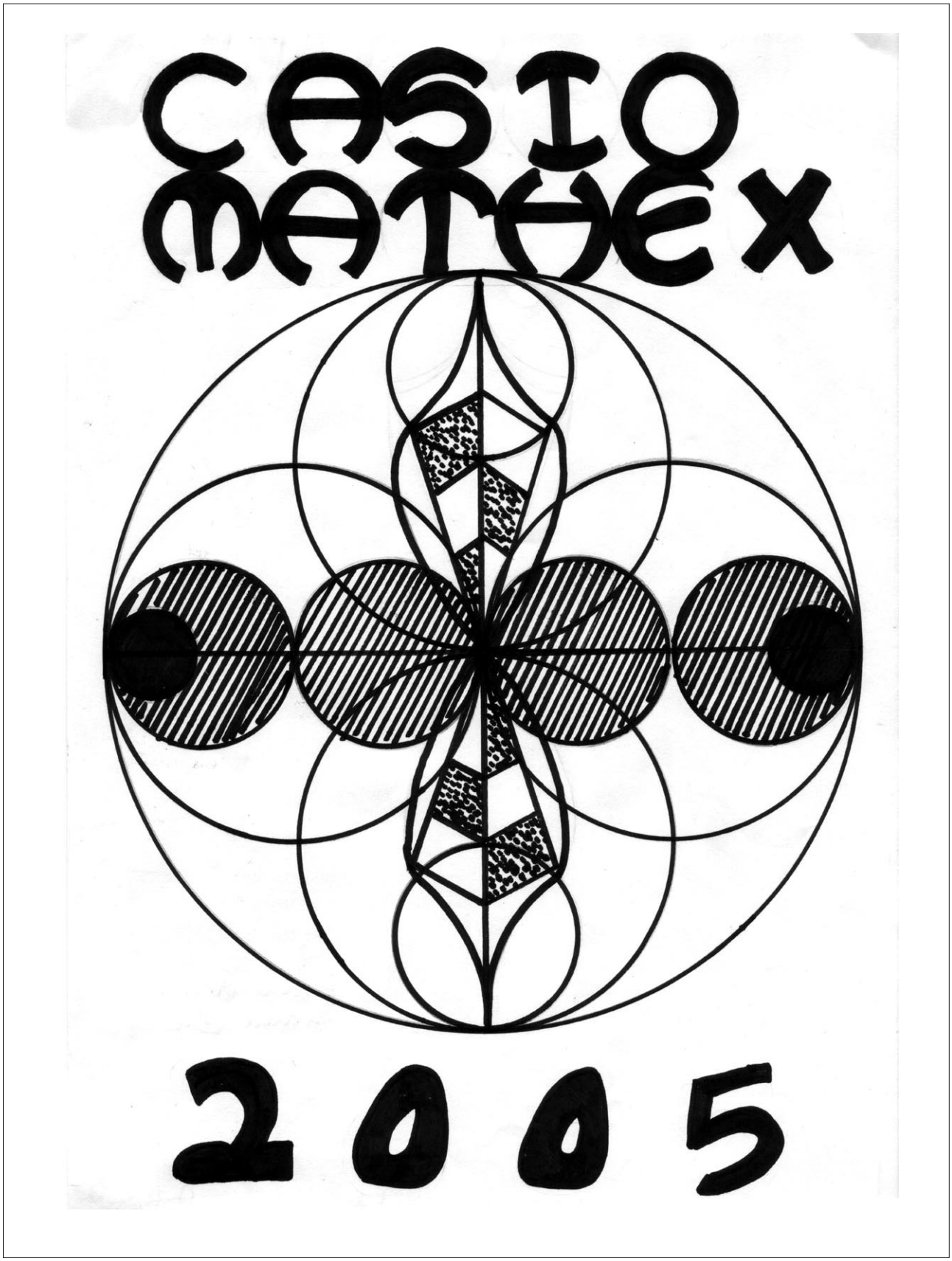
Year 9 Winners

1st Place and Best Overall Winner: *Peter Tchekourov - Pakuranga College* *(Front cover)*

2nd Place: *Danielle Pollock - St Cuthbert's College*



3rd Place: *Anthea Du - Epsom Girls Grammar*

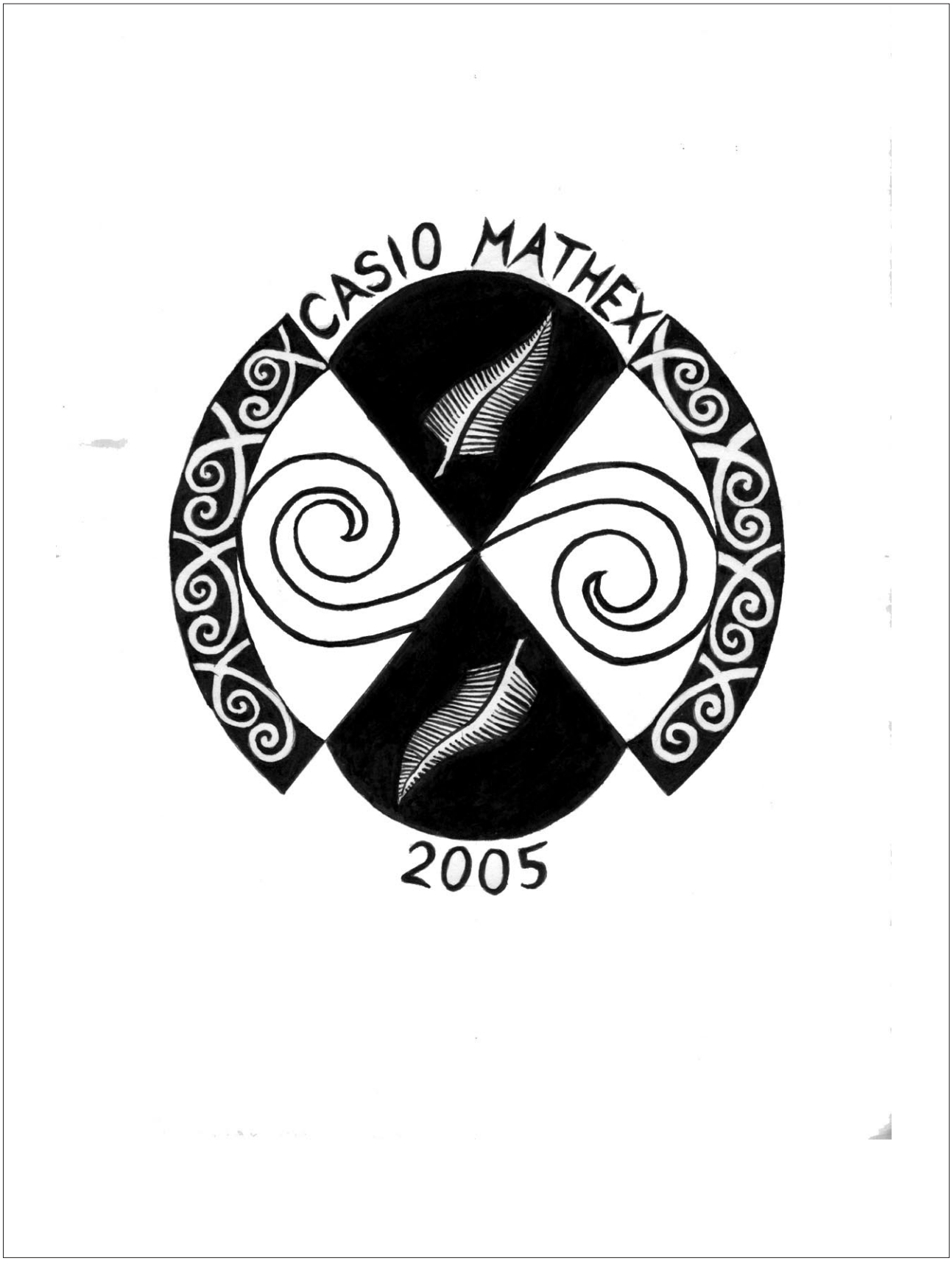


Year 10 Winners

1st Place: *Nicole Chinn - Pakuranga College*

2nd Place: *Serena Walker - Tuakau College*

3rd Place: *Maria Nenarokova - Maria Nenarokova*



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