# SHORT CIRCUIT

## COMING EVENTS:

| | |
|---|---|
| *July 22* | *Pi day* |
| *August 20-21* | *CMA Annual Conference. Australian Catholic University* |
| *November 10* | *CMA Annual General Meeting* |
| *November 10* | *The 314th day of the year—another Pi day!* |

## SHORT CIRCUIT

This is the second of what the CMA committee plans will be four editions in 2010.

We invite contributions of material for the newsletter from readers. Suitable submissions could include

* Notices of coming events of interest to mathematics teachers
* Reports and commentary on events and developments
* Short articles relating to mathematics education
* Short articles relating to mathematics
* Interesting problems, puzzles and educational activities suitable for primary, secondary and college students
* URLs and reviews of useful websites.

Short Circuit is jointly edited by Paul Turner and Jurek Paradowski.

Enquiries are welcome.

Contributions can be sent by e-mail to
 paul.turner@ed.act.edu.au
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or to
jurek.paradowski@ed.act.edu.au
0433 647 694
Alternatively, you can use the CMA mailing address:
PO Box 3572,
Weston ACT 2611.

## MEMBERSHIP

Membership of the CMA includes automatic affiliation with the Australian Association of Mathematics Teachers and a free AAMT journal.

Members are entitled to cheaper rates for CMA professional development events and the annual conference.

A membership application form for the CMA can be downloaded from our website: www.canberramaths.org.au

CMA members get members rates on resources bought from AAMT

## NATIONAL CURRICULUM

Information about progress on the National Curriculum is available from the ACARA's website: http://www.acara.edu.au/home_page.html.

Consultation on the draft senior secondary Australian Curriculum remains open until 30 July 2010. Consultation on the K-10 draft has now closed.

ACARA has a Frequently Asked Questions section on its website:

http://www.acara.edu.au/faqs.html which contains the following information about the timing of implementation.

"After feedback has been collated and analysed the draft curriculum content will be refined ahead of its final publication in late 2010.
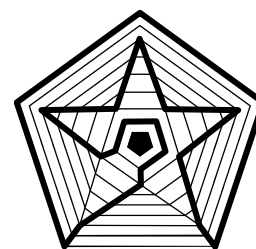
"Draft achievement standards for each course will be developed and made available for consultation in early 2011. It is anticipated that the final senior secondary curriculum, including content and achievement standards, will be ready for publication by mid 2011.

"While the curriculum will be available in 2011, it should be noted that state and territory curriculum, assessment and certification authorities have policies and practices which will influence decisions about start dates for implementation of the senior years Australian Curriculum."

## NEWS

We note the passing of Martin Gardner on 22 May, 2010, at age 95. Members will remember his Mathematical Games column in *Scientific American* magazine and his books of collected mathematical puzzles. Gardner was a prolific writer.

Apart from his journalism, he wrote books popularising science, mathematics and philosophy. As a committed sceptic he debunked pseudo-science, fringe religions and fuzzy thinking wherever he found them. Gardner is said to

have had trouble with high school calculus. And, remarkably, his successes in mathematics were achieved without the benefit of a university education in the subject.

**SHORT CIRCUIT**

# MATHS ACTIVE SCHOOLS

As announced in the last edition, the CMA committee has decided to adopt the Maths Active Schools program.

Schools are invited to apply to the CMA to be recognised as Maths Active Schools.

They will be able to use their Maths Active School accreditation and logo in their marketing.

It is hoped that the program will help to invigorate schools and individual teachers in their work in mathematics education.

A full description of this initiative can be obtained by contacting Jurek Paradowski or from the CMA website.

*Are you a Maths Active School?*

# PROBLEMS

*What just happened?*

1. Suppose you delegate to your junior sales representative the task of selling some oranges and apples. There are 30 apples that are to be sold at 3 for $1 and 30 oranges that are to be sold at 5 for $1. Having achieved good grades in mathematics at school, you are confident that the return on these sales should be $16 but your sales department says that all the fruit were sold to one buyer and the return was $15. The sales rep is called to account and explains that the average price was 4 for $1 for 60 pieces of fruit and so the total return was $15.

   What happened?

*Probability*

2. What is the probability that a 50-year flood event will occur at least once within the next 50 years?

*Ask the parrot*

A solution to the problem in the last newsletter, about the pirate's buried treasure, was supplied by Ruth Edge who explained: "Ask the parrot". Ruth, realising that her solution was not entirely ship-shape, asked her father for help with her homework and eventually produced a correct proof using coordinate geometry.

Ed Staples, who suggested the problem, has collected three or four further proofs variously based on vectors, complex numbers and coordinate geometry.
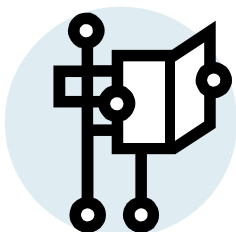
# MATHS BY EMAIL

*Maths by Email* is a free fortnightly email newsletter with news, activities, puzzles, web links and more! *Maths by Email* is produced by CSIRO Education and the Australian Mathematical Sciences Institute (AMSI); the Australian Association of Mathematics Teachers (AAMT) is a member of the reference group for this project.

To subscribe, go to:

http://www.csiro.au/resources/Maths-by-Email.html

# CONFERENCE 2010

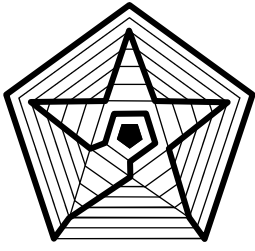The CMA Annual Conference, August 20-21, has the theme Sustainable Mathematics. Professor Hugh Possingham will be a keynote speaker.

The conference will include a meeting of Coordinators and Numeracy Officers following on from the similar meeting that was held at Erindale College earlier this year.

# FOR NUMEROLOGISTS

*Evil Numbers?*

The number 666 pops up a lot in recreational mathematics.

*     $\varphi / 2 + \sin(666) = 0$          ($\varphi$ is the Golden Ratio)

*     $\varphi(666) = 6 \times 6 \times 6$          (Here, $\varphi(n)$ is the Euler Totient Function)

*     $666 = 1^6 - 2^6 + 3^6$

*     $666 = 2^2 + 3^2 + 5^2 + 7^2 + 11^2 + 13^2 + 17^2$

*     The first 144 decimal digits of Pi sum to 666

*     The first 146 decimal digits of the Golden Ratio sum to 666

Mathematical Association of America | Math Games | www.maa.org

# PI DAY    22/7

The calculation of the digits of *pi* has occupied mathematicians since the day of the Rhind papyrus (1500 BC). Ludolph van Ceulen spent much of his life calculating *pi* to 35 places. Although he did not live to publish his result, it was inscribed on his gravestone.

The calculation of *pi* also figures in the Season 2 Star Trek episode "Wolf in the Fold" (1967), in which Captain Kirk and Mr. Spock force an evil entity (composed of pure energy and which feeds on fear) out of the starship Enterprise's computer by commanding the computer to "compute to the last digit the value of *pi*," thus sending the computer into an infinite loop.

Pi Digits |

http://mathworld.wolfram.com/PiDigits.html

*"The calculation of Pi also figures in the 1967 episode of Star Trek."*

3.14159265358979323846264338327950288419716939937510582097494459230781640628620899862803482534211706798214808651328230664709384460955058223172535940812...

ClassicGeek.com

# INTERESTING LINKS

Get real!

$i$ $\pi$

Be rational!

CSIRO programs
http://www.mathematiciansinschools.edu.au/
http://www.csiro.au/resources/Maths-by-Email.html

AAMT e-mail list
Anyone can join the list. The list enables members to share information and discuss issues - ranging from teaching tips and resources through to lengthy, thoughtful discussions of important matters of pedagogy and educational politics. To find out how to join the list, go to
http://www.aamt.edu.au/Professional-learning/email-list

We're on the Web!
http://www.canberramaths.org.au

## ABOUT THE CMA

The Canberra Mathematical Association (Inc.) is the representative body of professional educators of mathematics in Canberra, Australia.

It was established by, among others, the late Professor Bernhard Neumann in 1965.

It continues to run - as it began - purely on a volunteer basis.

Its aims include

* the promotion of mathematical education to government through lobbying,

* the development, application and dissemination of mathematical knowledge within Canberra through in-service opportunities, and

* facilitating effective cooperation and collaboration between mathematics teachers and their colleagues in Canberra.

## THE 2010 CMA COMMITTEE

| | | |
|---|---|---|
| President | Jurek Paradowski | Calwell High School |
| Vice Presidents | Evelyn Ashcroft | Melba Copland Secondary School |
| | Sue Wilson | Australian Catholic University |
| Secretary | Theresa Shellshear | Australian Catholic University |
| Treasurer | Ian Ross | Lyneham High School |
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| | Margie Smith | Office of Spatial Data Management |
| | Ed Staples | Erindale College |
| | Paul Turner | Erindale College |
| | Andy Wardrop | Erindale College |
| | Heather Wardrop | Lake Tuggeranong College |
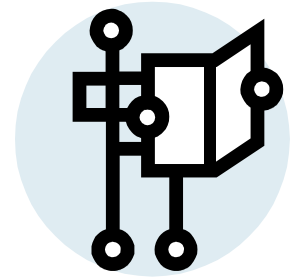
You can contact the Canberra Mathematical Association by e-mail:

canberramaths@yahoo.com.au