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September 1998

Regulars

## Editorial



### Roll-over malevolence

The plight of the SOHO spacecraft (see "[Mathematical mysteries: the three body problem](#)" elsewhere in this issue) reminds PASS Maths of an old gravitation problem. The problem states that a *malevolent deity* instantaneously reduces the speed of the Earth in its orbit about the sun to 0. The question is: how long before we crash and burn in the sun's deadly sphere?

This sort of apocalyptic fantasy is the stuff from which exam papers are made. As the new millennium approaches though, you might be forgiven for thinking that computer programmers, doubtless raised on a similar diet of supposed disaster, have managed to fashion the ultimate real-life Armageddon.

Now before we say anything about the millennium there are two things everybody should know about it. Firstly it is only the 2000th year, there was no year 0. This makes sense when you realise that our calendar was devised before the demise of Roman numerals as our main counting system. The second peculiar thing about the millennium is that it *is* a leap year. If you are one of the people who just said "of course it is, 2000 divides by 4" then think again; our leap year algorithm is more complicated than that. For example, the year 1900 was *not* a leap year!

The concern over the "millennium bug" ranges from scepticism to outright panic. It is not surprising that parallels are drawn with the alleged scenes of mass hysteria when the first millennium roll-over came round. Stories of people actually dying of fright while huddled into churches waiting for God's wrath to be unleashed seem far-fetched but they do appeal to a natural sense of awe that most of us have for numbers.

So when you wake up, hung over from partying or just plain richer from generous overtime payments, PASS Maths' advice is to hold your breath that little bit longer – at least until March the 1st!

### Understanding science

There is no doubt that science and technology is now having an unprecedented effect on our lives. While smart machines take control of our day to day living needs we spend more and more time in front of more machines: watching the TV, playing video games and now surfing the Internet.

## Editorial

Perhaps our angst over the ability of these machines to handle the millennium roll-over is partly an expression of our own estrangement from them. As you work on improving your lap times in the latest driving simulation or wait for the lewd details of Bill Clinton's affair with Monica Lewinsky to trickle through your computer modems, spare a thought for the armies of mathematicians, computer scientists and engineers who are constantly working to enhance these experiences.

How much do we know about what they do? Over the last two years PASS Maths has watched as a small movement in the public understanding of science has become a huge wave of interest – something we're proud to be part of. This has resulted in a whole host of educational projects timed to coincide with the new millennium, including of course the controversial millennium dome.

It is not just the "public" that will learn from this process either. An important part of projects like PASS Maths is to raise awareness amongst practising mathematicians that communicating their ideas to a wider audience is important. In our experience, some academics have been sceptical at first but we are pleased to report that once they see publications like PASS Maths many are converted. Since we started publication in January 1997 we have enjoyed the enthusiastic co-operation of many first-time web-authors.

## Time to change

PASS Maths is now at the end of its planned two-year pilot phase. After a successful fundraising effort, readers can look forward to an expansion of PASS Maths' activities over the next two years as it teams up with its sister project, NRICH maths and a new initiative ready for the millennium.

This issue will be the last one produced by the current editorial team. We'll be handing over to a new team in time for the next issue of PASS Maths, due to be published in January 1999. PASS Maths has been hard but enjoyable work and we'd like to take this opportunity to thank the authors, teachers, students and staff who have helped us to make the project a success.



*Plus* is part of the family of activities in the Millennium Mathematics Project, which also includes the NRICH and MOTIVATE sites.