

# Mathematicians revel as Pi Day approaches

March 11 2016, by Cristy Burne, Sciencenetwork Wa

---



Credit: CC0 Public Domain

Few true mysteries remain, but Pi is one of them.

This enigmatic number can never be calculated, yet it's essential for everything from keeping satellites in the air to packing beans into cans, not to mention simulating climate, optimising TV signals, building

stadiums, operating smartphones and enabling [quantum mechanics](#).

At its simplest, Pi is the ratio of a circle's circumference to its diameter, and it's exactly the same for circles of any size.

This coming Monday (the 3rd month, the 14th day and, if we round up, the 16th year of the new century) is this mysterious number's chance to shine.

## **An infinite, invaluable mystery**

Most of us were introduced to Pi in high school and know it as 3.14159, but mathematicians have calculated Pi to more than a trillion digits.

"Pi is an irrational number, you can only ever calculate it approximately," Curtin University Head of Mathematics Professor Song Wang says.

"It's really a fascinating number and has attracted many mathematicians over the last 2000 years," he says.

"Theoretically we can calculate it up to infinite digits, some people have memorised up to 30,000 digits."

The Guinness World Record for memorising Pi is 67,890 digits.

Memorising Pi may not be top of your list of things to do, but Prof Wang says International Pi Day is a great time to give thanks to modern mathematics.

"In daily life, you cannot get away from essential geometry, and the only way you can work with geometry is through Pi," he says.

"For example, if you're a cyclist, you can use Pi to work out how far you've cycled, or if you're an engineer, you use Pi in designing car tyres, water flows, buildings..."

"For rocket science, you can calculate things like the trajectory of the Earth using Pi."

Prof Wang works as a numerical analyst, and his own research into Fourier transforms relies heavily on Pi to approximate otherwise-unsolvable equations.

"I use trigonometry functions to approximate other functions, transcendental functions, and for trig functions you have to use Pi."

Fourier transforms are essential to modern processing of data, including application in 4G networks, Wi-Fi and medical imaging.

## **Celebrating International Pi Day**

Pie-eating is a popular way to celebrate Pi's big day, but Prof Wang says he'll be sticking to circular biscuits.

"We'll celebrate with our students and a cup of tea, from a circular mug on a circular table," he says.

*This article first appeared on [ScienceNetwork Western Australia](#) a science news website based at Scitech.*

Provided by Science Network WA

Citation: Mathematicians revel as Pi Day approaches (2016, March 11) retrieved 19 April 2024 from <https://phys.org/news/2016-03-mathematicians-revel-pi-day-approaches.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.