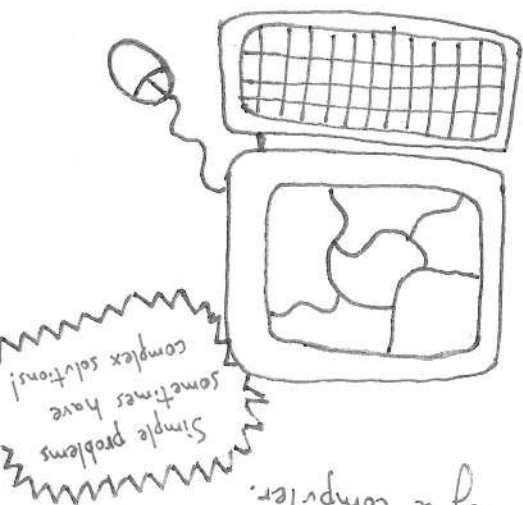




It was actually the first big mathematical proof that had to use the help of a computer.

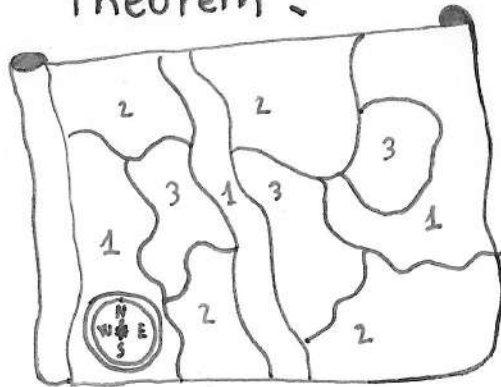
Did you like this zine?
It was made during the Math Zine Fest 2021.
Find more wonderful and interesting math zines on Twitter with the hashtag #MZF2021.

🐦 @JorgeLujanMora
📺 QED Mater
✉ qedmater@gmail.com

The conjecture was first proposed in 1852...
But it wasn't proved until the 1970's by Appel, Haken and Koch.

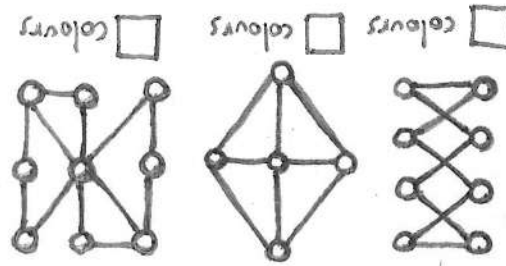
How can we be sure we'll never need more than four colours

≡ The FOUR COLOUR Theorem ≡



— Maps, maths and graphs —

How many colours do you need? Try these examples!

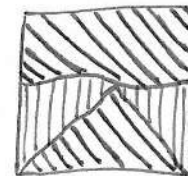


How many colours do you need if you want to colour a MAP using as few colours as possible?

RULES:

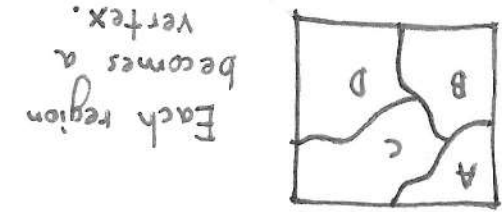


↑
Adjacent regions (those that share an edge) should have different colours.



↑
If they only have a point in common it's OK to use the same colour for both.

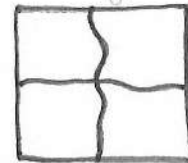
Two vertices are joined by an edge if they are adjacent in the map. That way it's easier to work with!



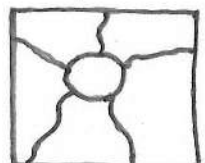
We can turn a MAP into a GRAPH:

The answer is you'll never need more than 4! That's the 4-colour theorem.

In some cases you'll need fewer colours. Try these examples!



↑
needed colours



↑
needed colours



↑
needed colours