

# GIS Intro

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# Set up

# Goal

- building together
- touching basis
- some exercises; no grading :)

# Goal

- You are living
- You occupy space
- You have a mass
- You Matter !

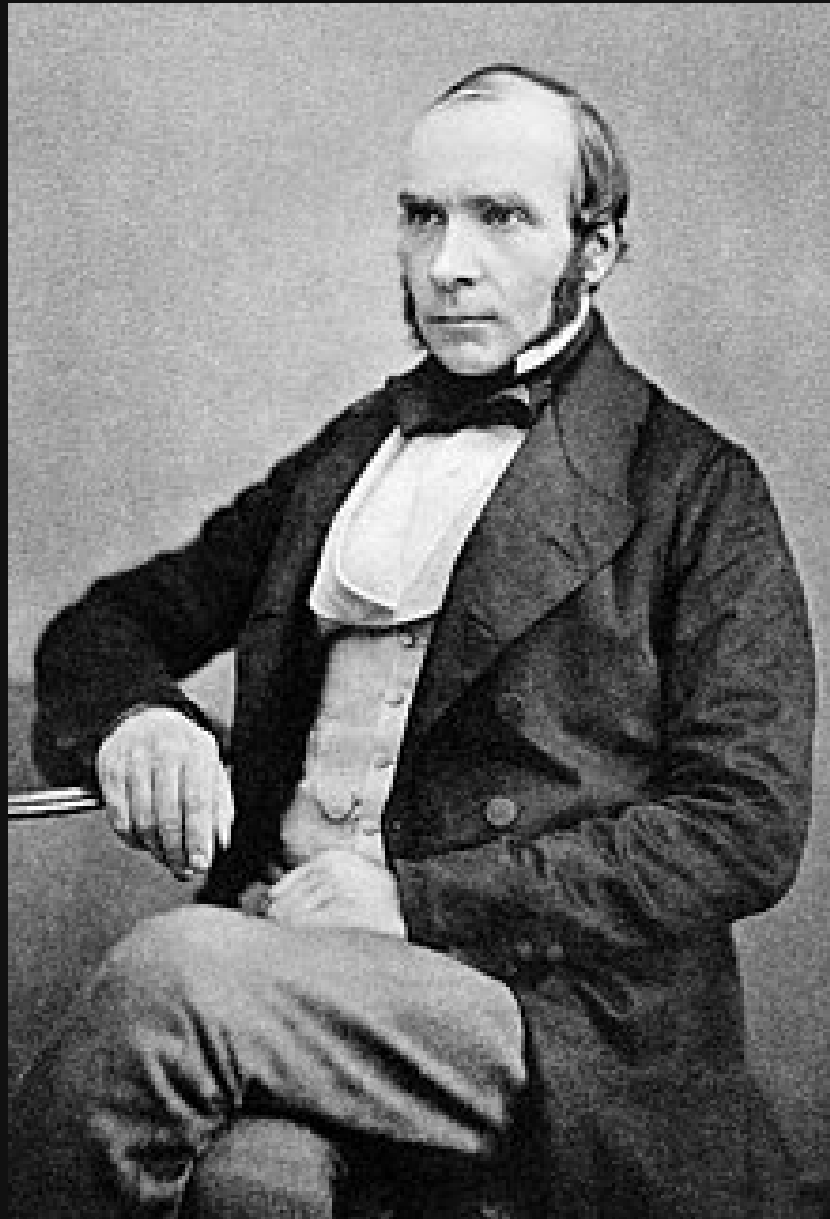
# Beginning

**It all begins with**

# a Man and his Map



# a Man and his Map



[https://en.wikipedia.org/wiki/John\\_Snow](https://en.wikipedia.org/wiki/John_Snow)

# Development

# Corona



<https://www.thescottishsun.co.uk/news/5357782/coronavirus-cases-hits-100000-as-chilling-new-animation-shows-spread-of-deadly-bug-around-the-world/>

## Limit

$$S = 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \dots$$

$$\lim S = 2 \quad \text{or} \quad \infty$$

# Flight



# Shipping



## Domain

$$x^2 + x + 1 = 0$$

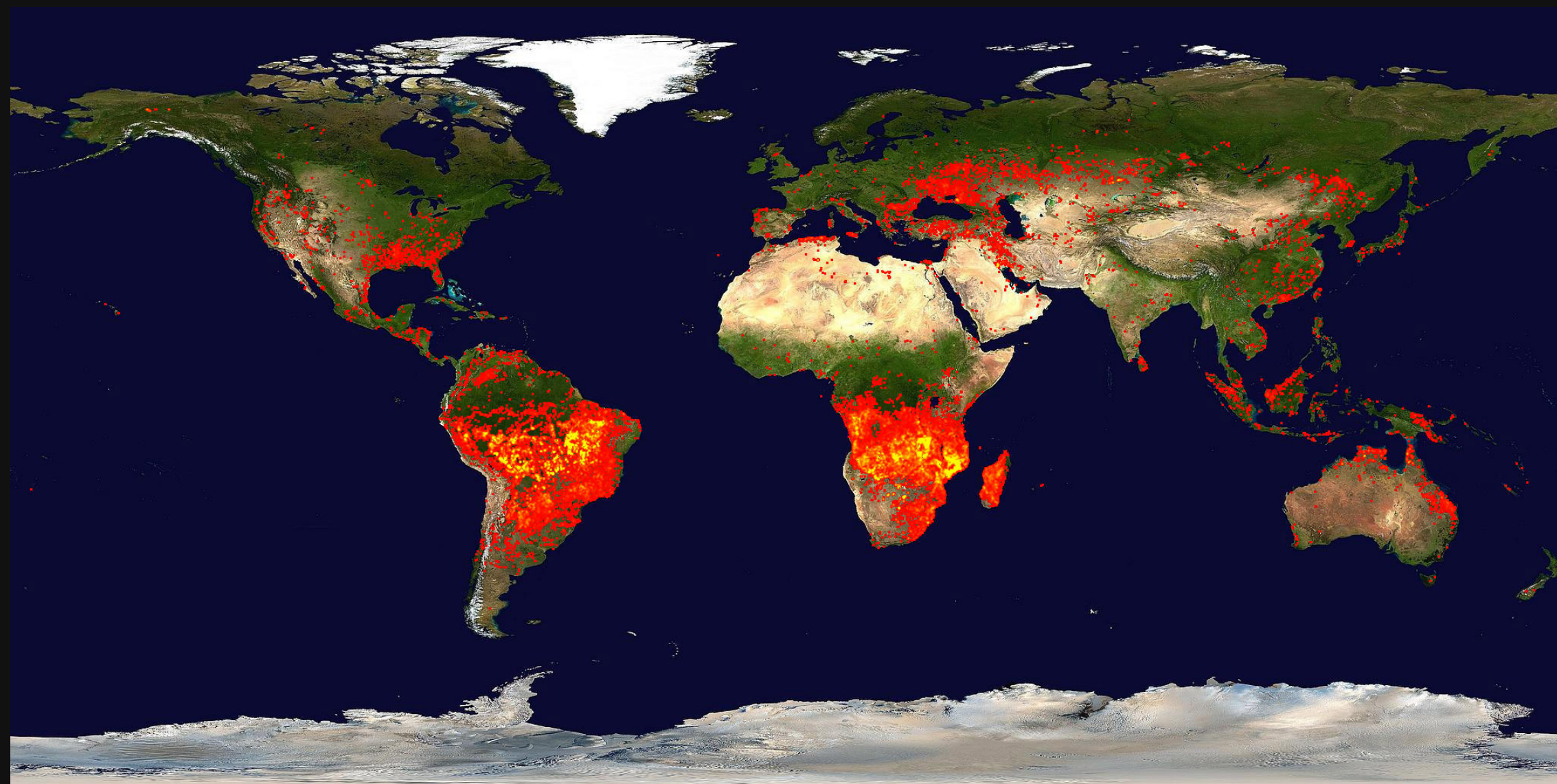
$$x + 1/x + 1 = 0$$

$$x^2 - 1/x = 0$$

$$x^3 - 1 = 0 \Rightarrow x = 1$$

$$1 + 1 + 1 = 3 = 0$$

# Wild Fire



<https://www.nasa.gov/topics/earth/features/wildfires.html>

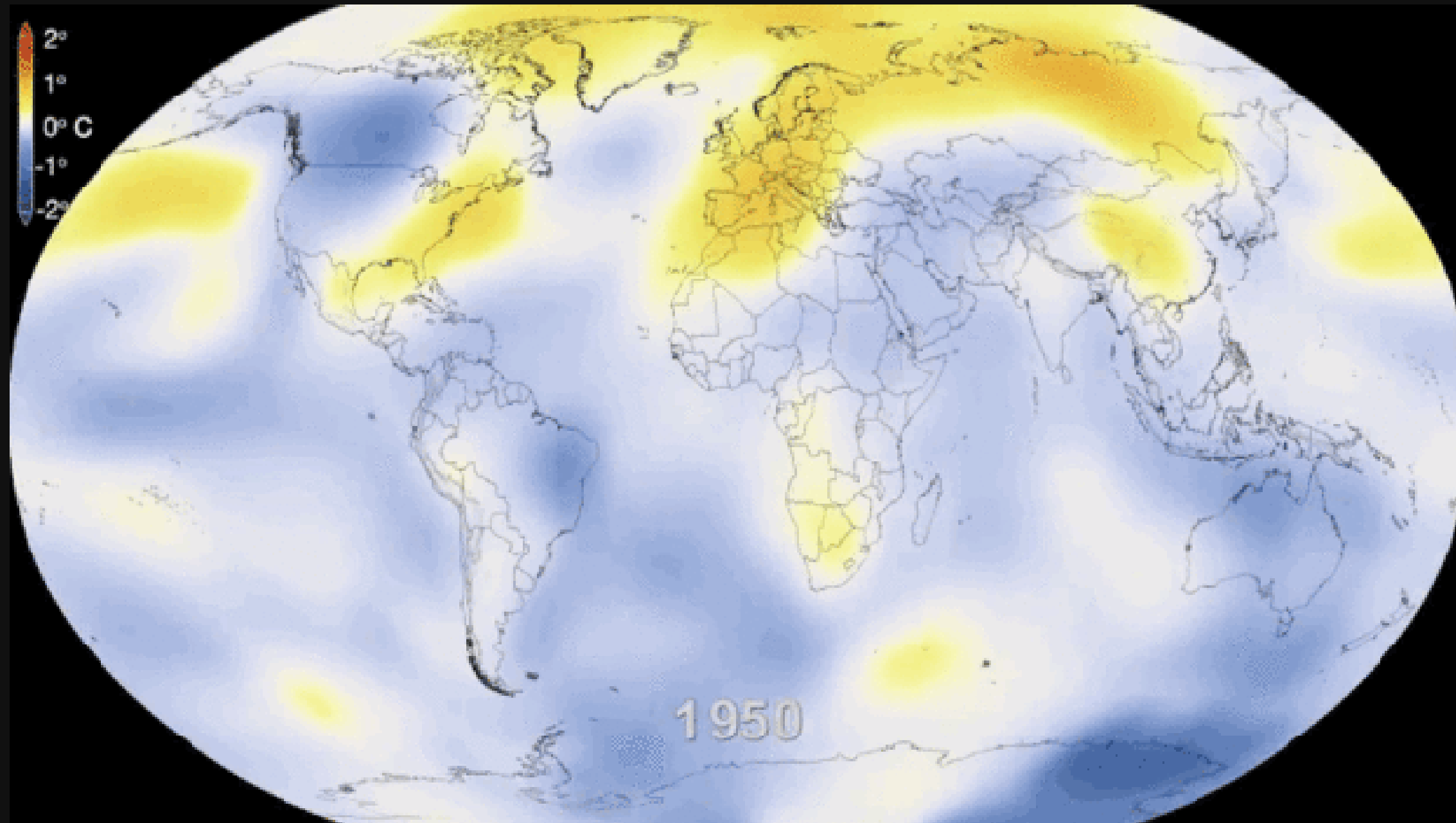
## **Probability**

40% chance of forest fire in California and 30% chance of that in Australia. So the chance of forest fire in California and Australia is 70%.

## **Probability**

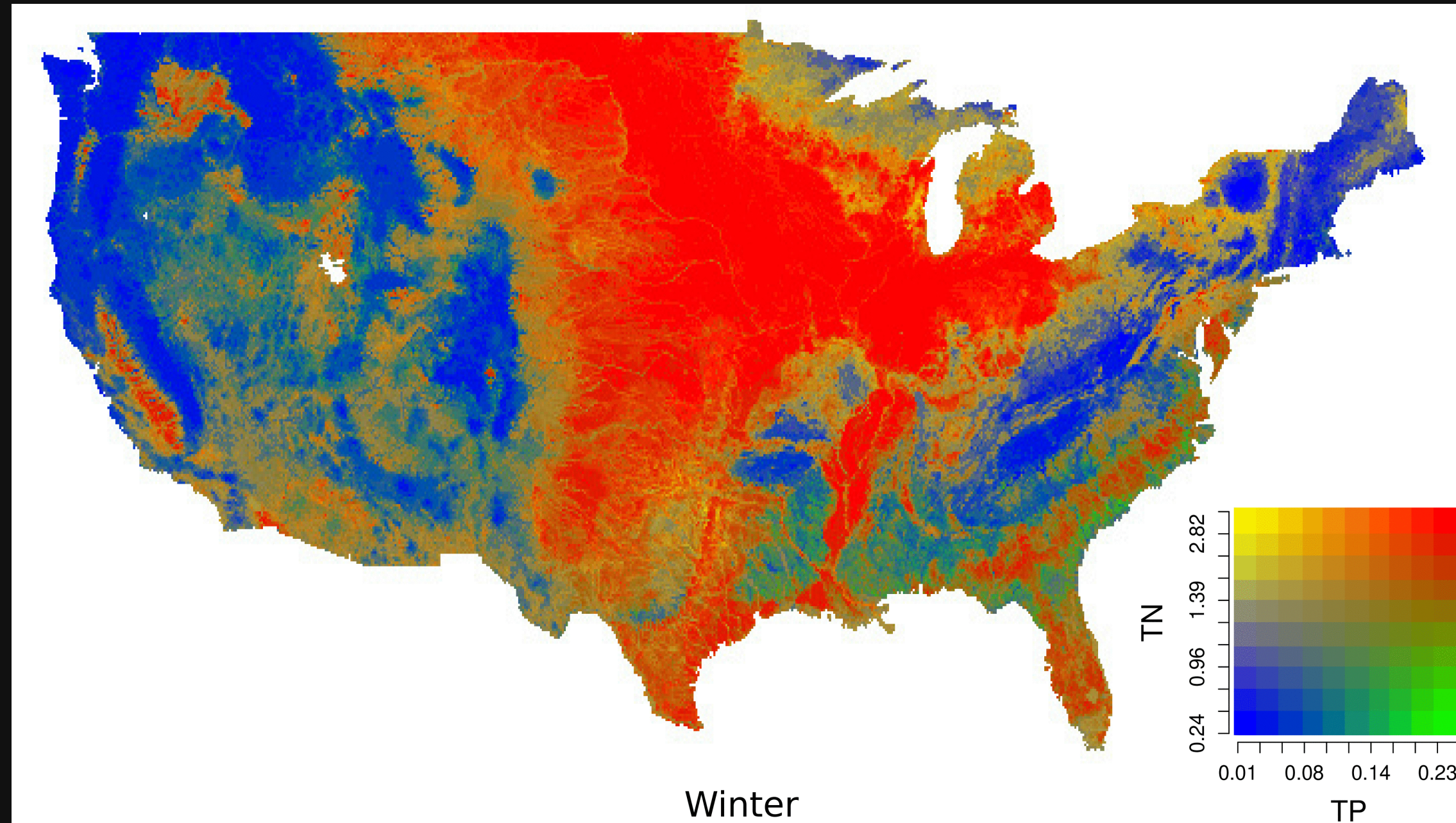
We have 12 students in the classroom, what's the probability at least two of them having birthday on the same day?

# Temperature



<https://www.planetaid.org/blog/what-climate-change-looks-like-in-6-gifs>

# Environmental Chemicals

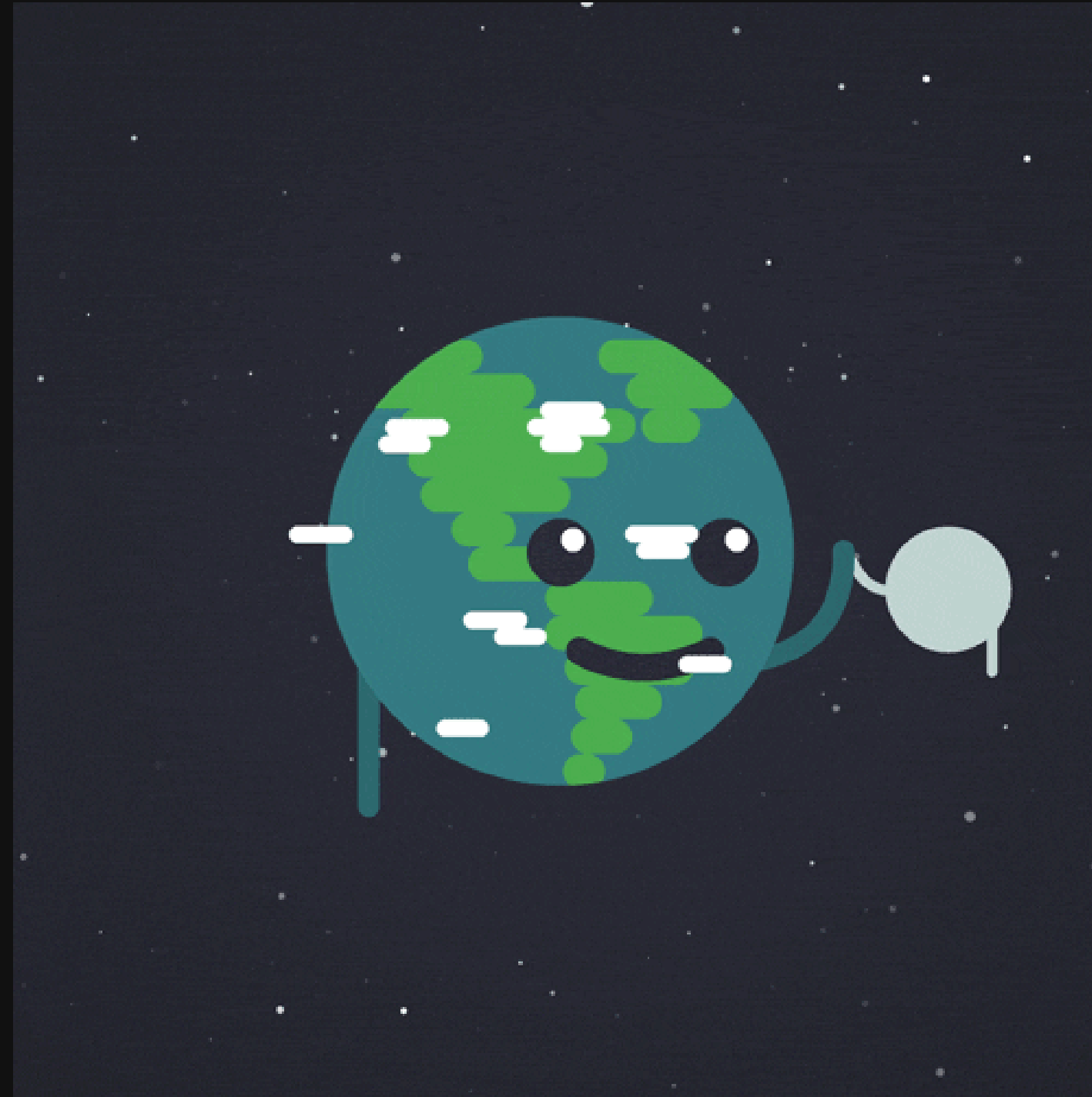


<https://www.nature.com/articles/s41597-020-0478-7>

## **Distributions**

Find out the probability of throwing at least two "sixs" in 4 throws of a fair die

# into the Space



<https://chrisbmarquez.com/post/155193724575>

# Course Offering

# Insight

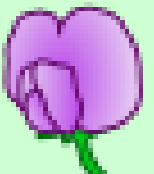
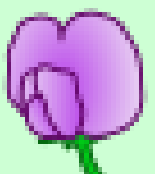
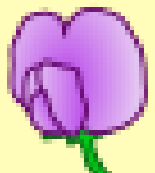
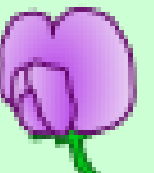
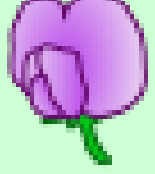
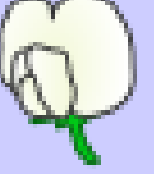
- seeing deeper
- seeing farther

# Mendel Experiment

- Mendel's Principle of Heredity



Gregor Mendel

		 pollen ♂	
		B	b
 pistil ♀	B	 BB	 Bb
	b	 Bb	 bb

# Mendel Experiment

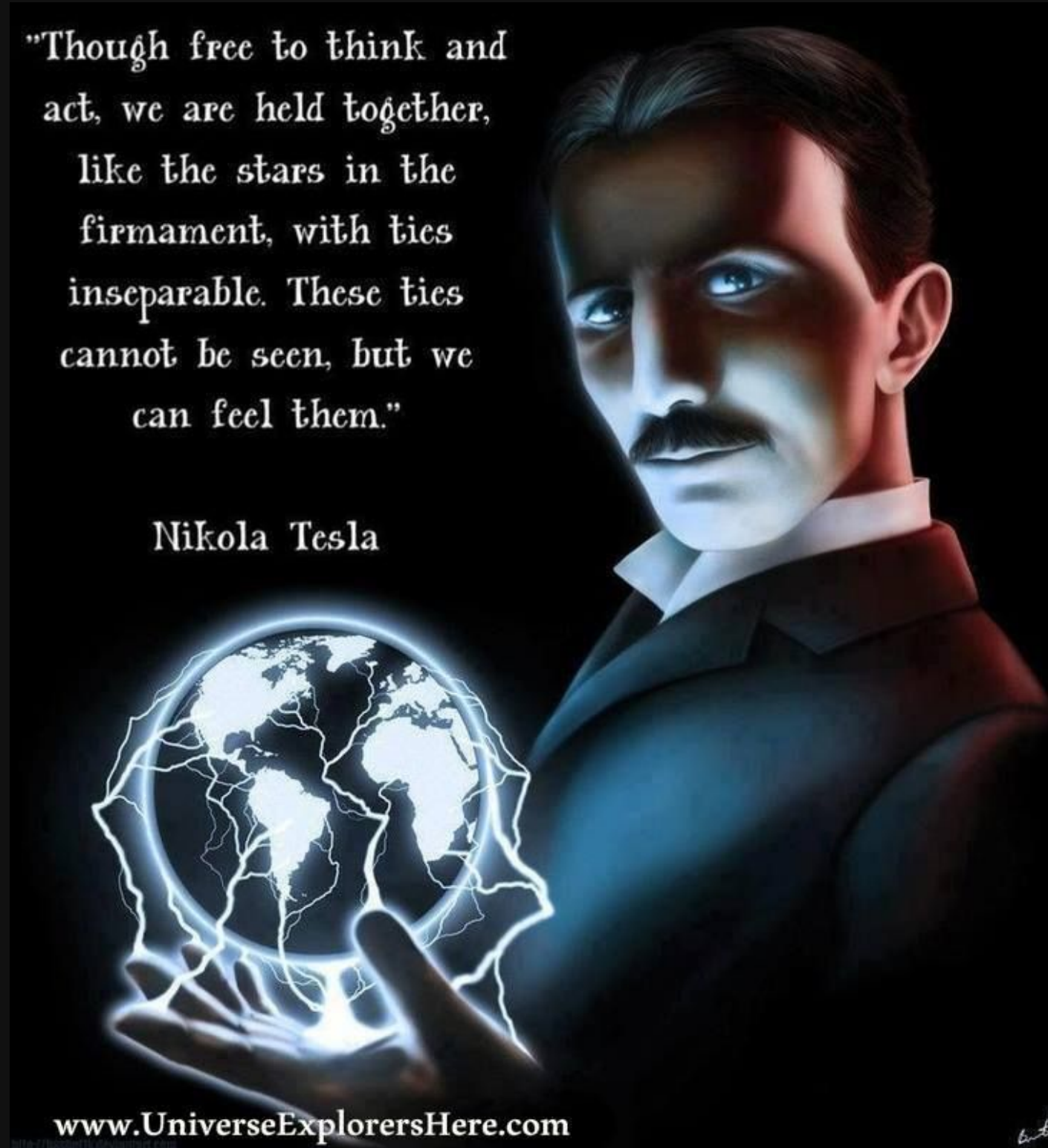
experimental results

- color 705 : white 224
- expected ratio 3:1
- $705/224 = 3.147$

# Connections

"Though free to think and  
act, we are held together,  
like the stars in the  
firmament, with ties  
inseparable. These ties  
cannot be seen, but we  
can feel them."

Nikola Tesla



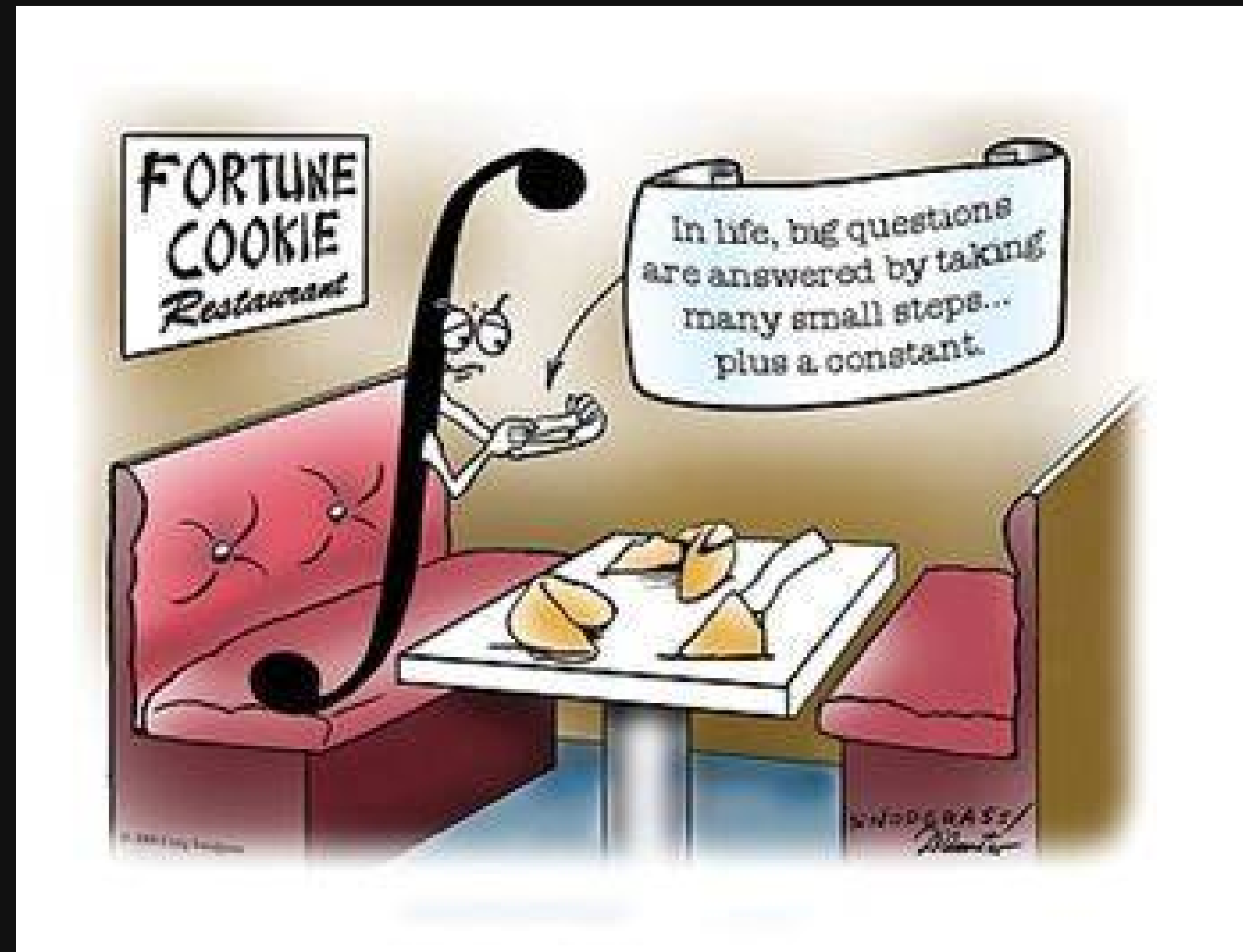
[www.UniverseExplorersHere.com](http://www.UniverseExplorersHere.com)

# Power of Prediction



# Learning Approach

# Stead progression



# Collaborations



e<sup>x</sup>

<http://istockphoto.com/>

# Course Policy

# Collaboration on HW

- case specific
- if allowed, max 3 people
- clear statement of contributions

# Support

- office hour : no HW solutions but ok for clarity
- slack : free discussion at the community level

**Who am I ?**

24601

# Who am I ?

- Modeller
- Scientific Programmer
- Unix Enthusiast

# Acknowledgement

Thanks for Your Attention

