# Probability and Random Processes

## EES 315

**Asst. Prof. Dr. Prapun Suksompong**

prapun@siit.tu.ac.th

## 2 Review of Set Theory

**Office Hours:**

**Check Google Calendar on the course website.**

**Dr.Prapun's Office:**

**6th floor of Sirindhralai building, BKD**

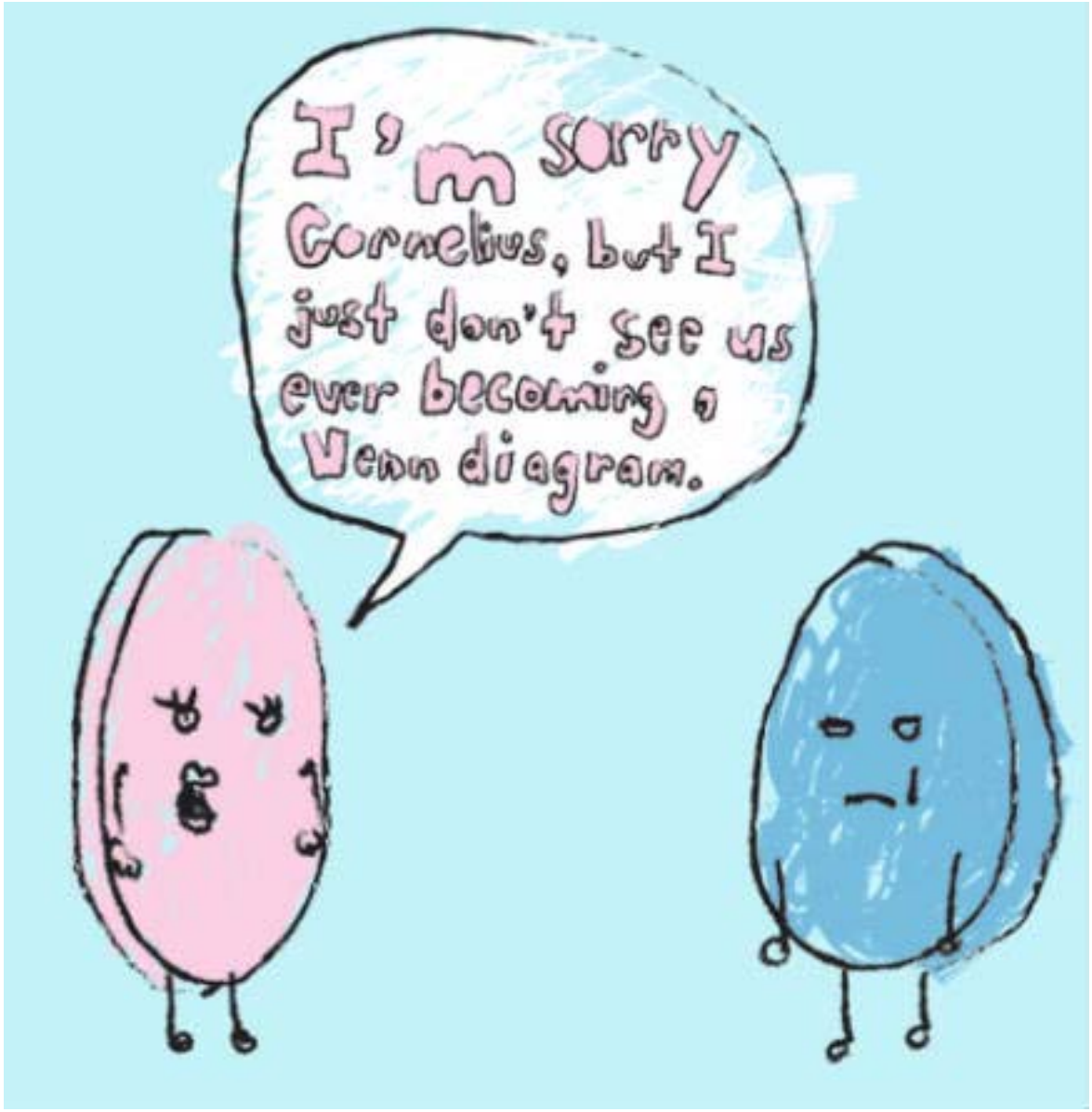
# Hmmm...

When someone at Reuters designed this, they probably didn't expect that it would be interpreted as a Venn diagram.

Just what are its values?

[http://gizmodo.com/when-someone-at-reuters-designed-this-they-probably-di-1624314532]

# Breaking Up via Venn Diagram



# Font styles used in the lecture notes

- **Calligraphy** (calligraphic font)

  $\mathcal{A}\ \mathcal{B}\ \mathcal{C}\ \mathcal{D}\ \mathcal{E}\ \mathcal{F}\ \mathcal{G}\ \mathcal{H}\ \mathcal{I}\ \mathcal{J}\ \mathcal{K}\ \mathcal{L}\ \mathcal{M}\ \mathcal{N}\ \mathcal{O}\ \mathcal{P}\ \mathcal{Q}\ \mathcal{R}\ \mathcal{S}\ \mathcal{T}\ \mathcal{U}\ \mathcal{V}\ \mathcal{W}\ \mathcal{X}\ \mathcal{Y}\ \mathcal{Z}$

- **Blackboard bold**
  - Certain lines of the symbol (usually vertical or near-vertical lines) are doubled.
  - Originated from the attempt to write bold letters on blackboards in a way that clearly differentiated them from non-bold letters.

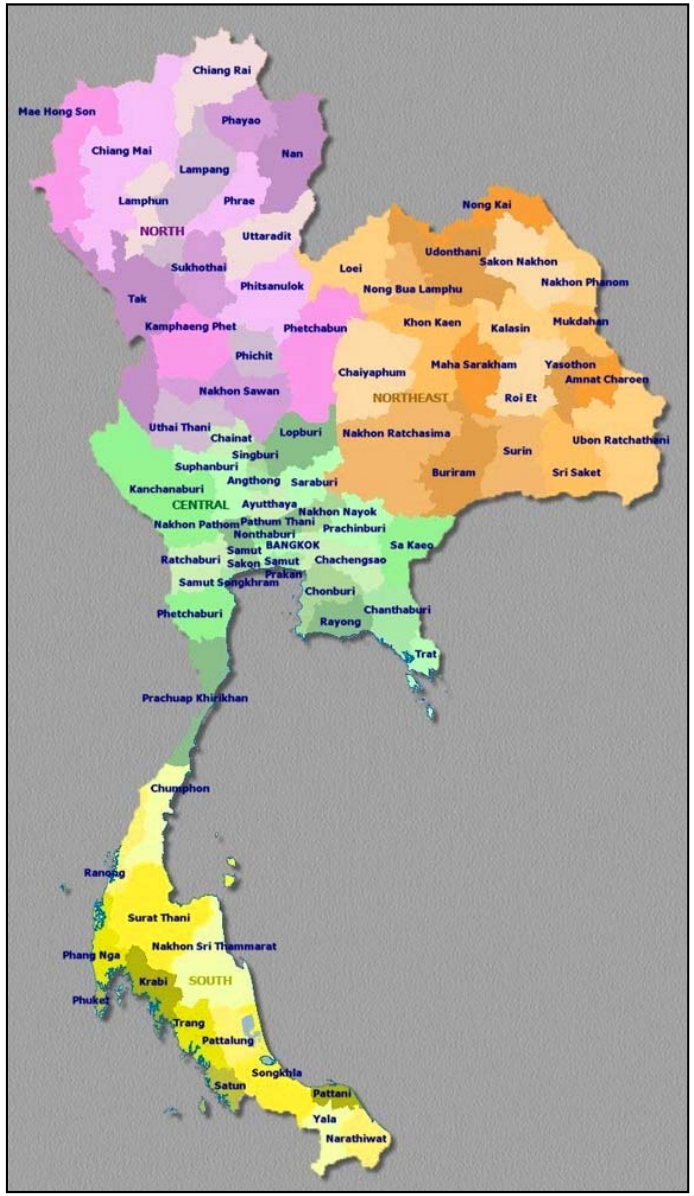
$\mathbb{A}\ \mathbb{B}\ \mathbb{C}\ \mathbb{D}\ \mathbb{E}\ \mathbb{F}\ \mathbb{G}\ \mathbb{H}\ \mathbb{I}\ \mathbb{J}\ \mathbb{K}\ \mathbb{L}\ \mathbb{M}$

$\mathbb{N}\ \mathbb{O}\ \mathbb{P}\ \mathbb{Q}\ \mathbb{R}\ \mathbb{S}\ \mathbb{T}\ \mathbb{U}\ \mathbb{V}\ \mathbb{W}\ \mathbb{X}\ \mathbb{Y}\ \mathbb{Z}$

https://en.wikipedia.org/wiki/Blackboard_bold
https://proofwiki.org/wiki/Symbols:%5Cmathcal

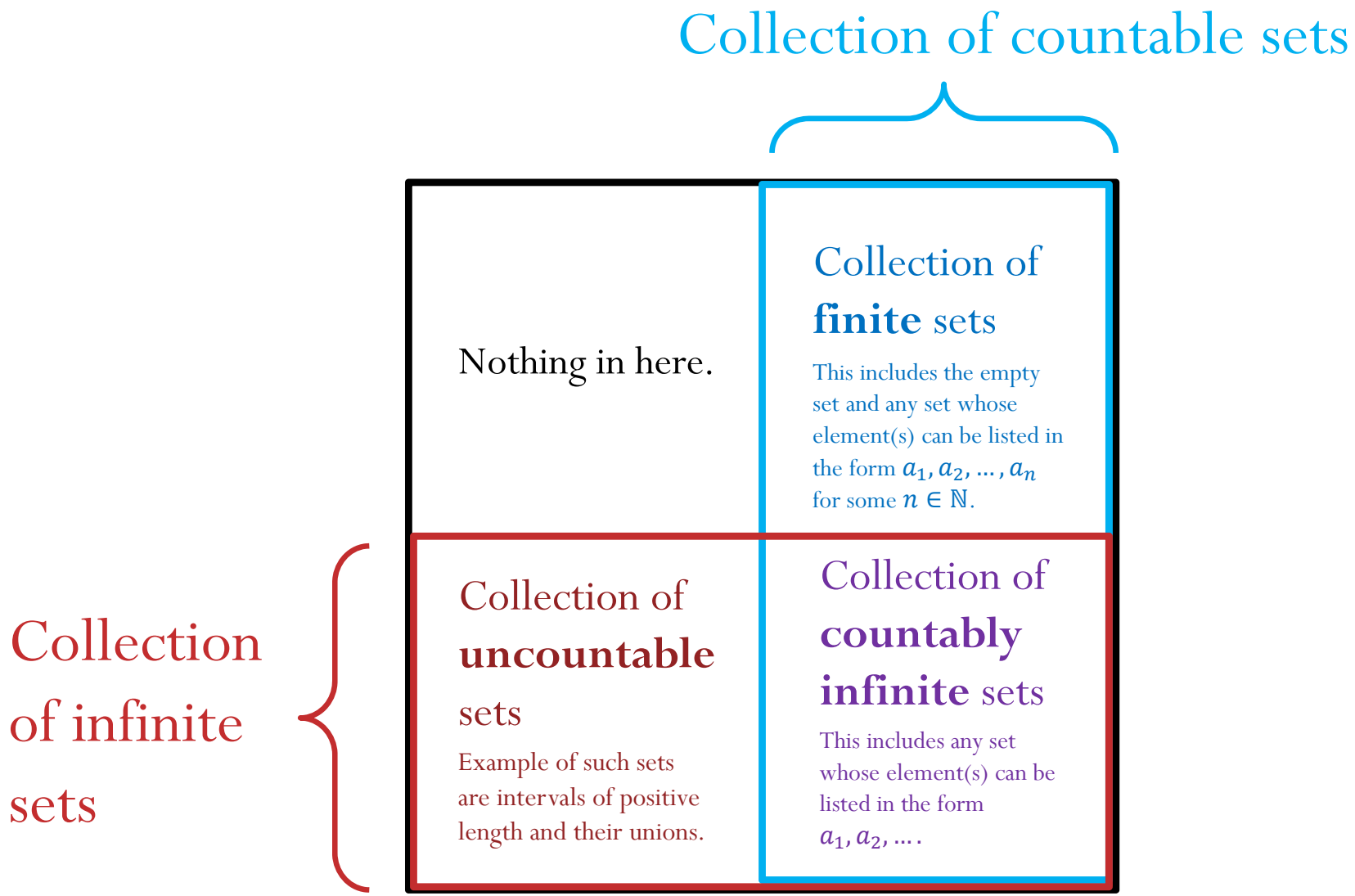
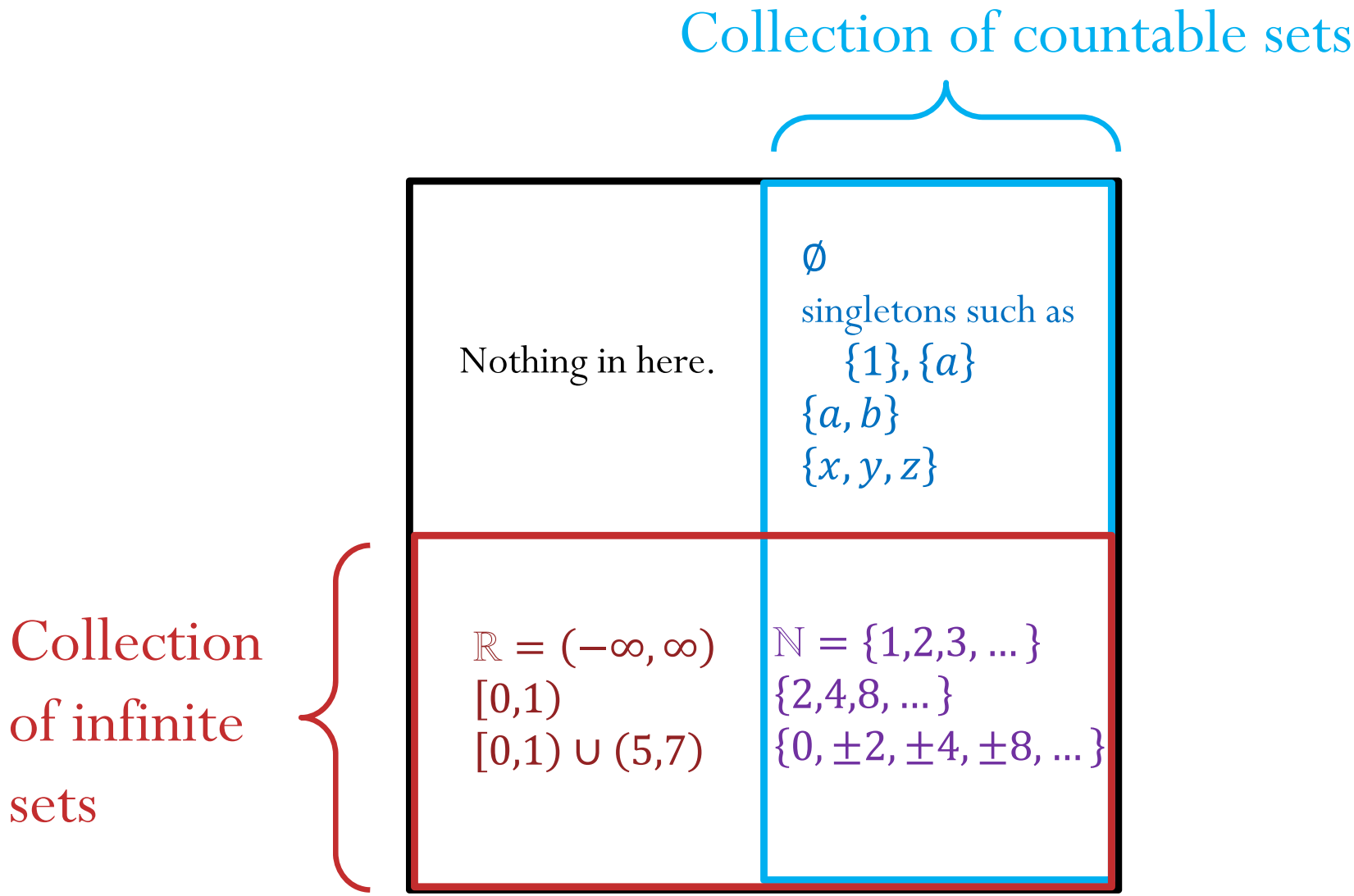
# Partitions

MYANMAR
LAOS
THAILAND
VIETNAM
PHILIPPINES
CAMBODIA
MALAYSIA
BRUNEI DARUSSALAM
SINGAPORE
INDONESIA


Chiang Rai
Mae Hong Son
Phayao
Chiang Mai
Nan
Lampang
Lamphun
Phrae
NORTH
Uttaradit
Nong Kai
Udonthani
Sakon Nakhon
Sukhothai
Loei
Nakhon Phanom
Phitsanulok
Nong Bua Lamphu
Tak
Kamphaeng Phet
Phetchabun
Khon Kaen
Kalasin
Mukdahan
Phichit
Chaiyaphum
Maha Sarakham
Yasothon
Amnat Charoen
Nakhon Sawan
NORTHEAST
Roi Et
Uthai Thani
Chainat
Lopburi
Nakhon Ratchasima
Ubon Ratchathani
Singburi
Surin
Suphanburi
Buriram
Sri Saket
Angthong
Saraburi
Kanchanaburi
CENTRAL
Ayutthaya
Nakhon Nayok
Nakhon Pathom
Pathum Thani
Prachinburi
Nonthaburi
BANGKOK
Sa Kaeo
Samut
Ratchaburi
Sakon Samut
Chachengsao
Prakan
Samut Songkhram
Chonburi
Phetchaburi
Chanthaburi
Rayong
Trat
Prachuap Khirikhan
Chumphon
Ranong
Surat Thani
Nakhon Sri Thammarat
Phang Nga
Krabi
SOUTH
Phuket
Trang
Pattalung
Songkhla
Satun
Pattani
Yala
Narathiwat

WASHINGTON
OREGON
CALIFORNIA
IDAHO
NEVADA
MONTANA
WYOMING
UTAH
ARIZONA
COLORADO
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
RHODE ISLAND
CONNECTICUT
NEW JERSEY
DELAWARE
MARYLAND
Washington D.C.
ALASKA
HAWAII

# Infinite Sets and Countable Sets



# Infinite Sets and Countable Sets