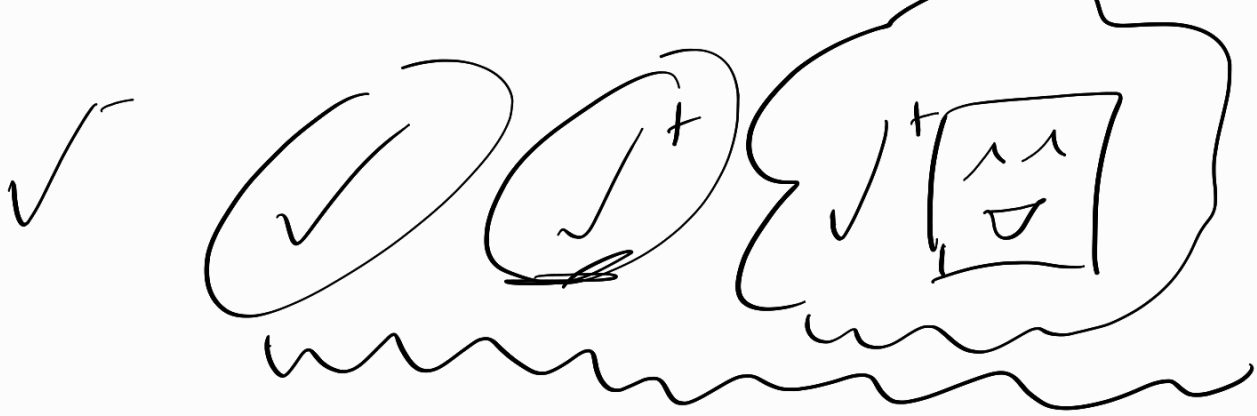


Q1 Join college board class thing!] 15 MCQ

stats ← spoken in probability ← set theory

Set: A collection of objects

Q: is there absolutely universal set?

A: Nope! Russel's paradox

$\{2, 4, 8\}$ "elements" "individuals"

$\{x : x \text{ is even integer}\}$ "variable"

set of

$A = \{ x : x \text{ is not in } A \}$

— context matters

← this box must exist - Russel

Random Variable: A variable that is random!!

- value of variable changes

Sample Space = {all possible events to happen}

Random Variable: Domain is Ω
Image is $\mathbb{R}$

Example

Flip 2 coins:

$$\Omega = \{HH, HT, TH, TT\}$$

X = # of heads that comes } random variable

$X(\omega = HH) = 2$

ω variable

$X(\omega = HT) = 1$

$X(\omega = TH) = 1$

$X(\omega = TT) = 0$

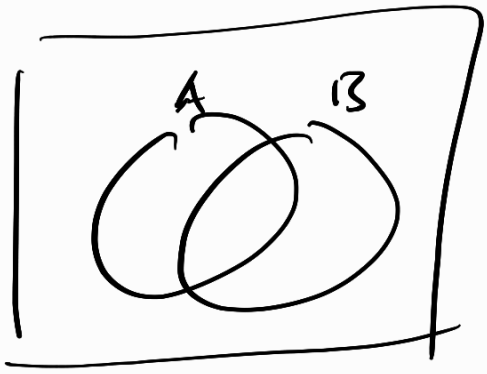
① discrete

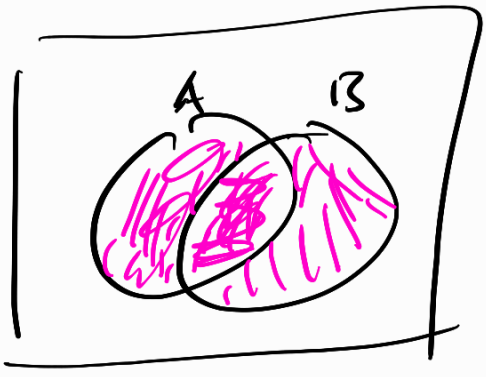
integers

② continuous

interval of Reals

A, B are sets





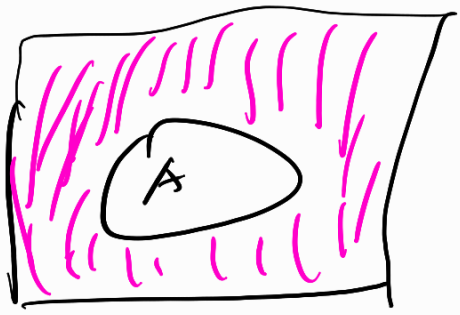
$A \cup B$ = everything in A or in B

Union

$A \cap B$ = everything in A

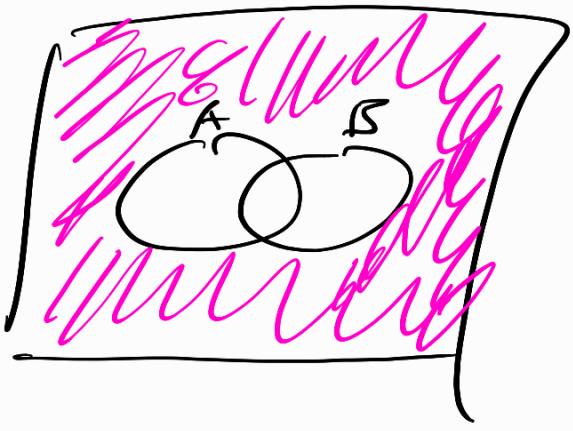
Intersection

and in B



A^c = everything not in A

$A^c \cap B^c$



$(A \cap B)^c$

$A \cap (B \cup C)$

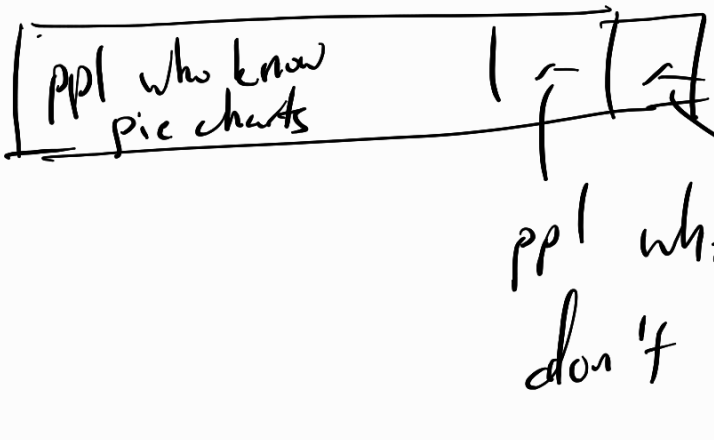
Quantitative:

discrete:
- dot plots
- stem & leaf plots
- frequency tables

cts

continuous:
- histograms
- cumulative dist. plots

Categorical
- pie chart
- bar graphs
- Segmented bar graph



	US	others	relative freq.
≤ 10 :	0	1090	$1090/2027$
10-15 :	1	337	$334/2027$
15-20 :	2	300	$302/2027$
20-25 :	0	200	$200/2027$
25+ :	1	100	$101/2027$
	4	2023	