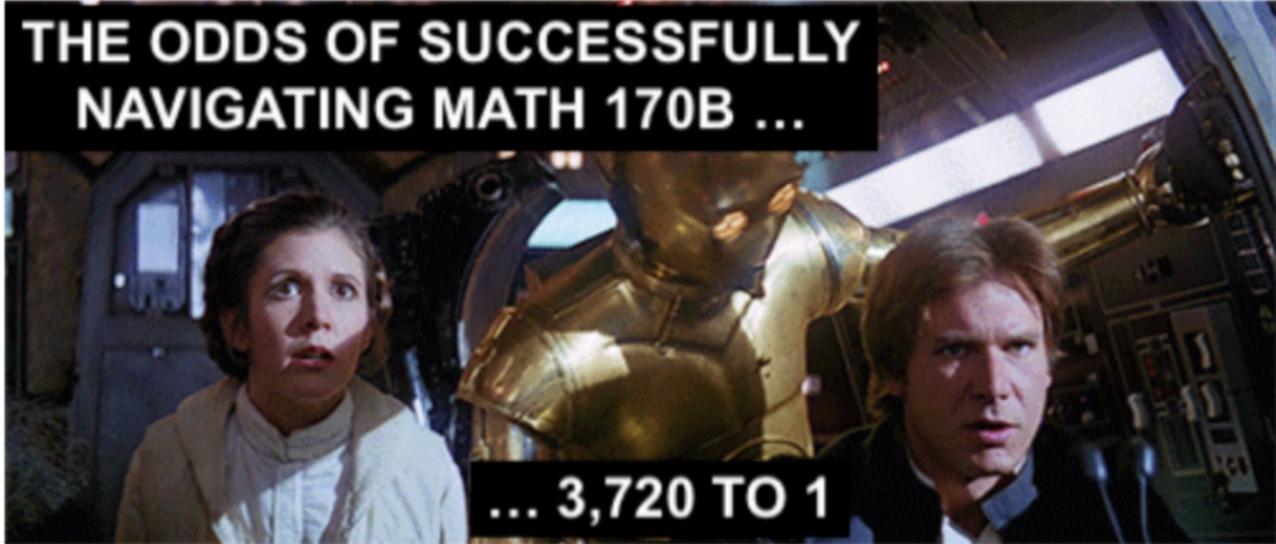


Probability Memes from Math170b

Spring 2019

**THE ODDS OF SUCCESSFULLY
NAVIGATING MATH 170B ...**

A still from the movie 'The Sandlot' showing a young girl and a man looking at a large golden robot in a control room. The girl is on the left, looking up with a surprised expression. The man is on the right, looking forward with a serious expression. The robot is in the center, partially obscured by the text.

... 3,720 TO 1

What is the probability of
answering this question correctly?

$$\begin{aligned}y &= \frac{\sin x}{n} \\ &= \frac{\sin x}{n} \\ &= \text{six} \\ &= 6\end{aligned}$$

A. 1

B. 0



**When you
put $P(A_n \text{ i.o.})=1$**

**But forgot to check
whether A_n are independent**



$P(\text{Not drop hair, Learning math}) = \tan 90^\circ = \text{DNE}$

when you want to make a good probability
meme but you don't know the probability
concepts well enough to make a good one:



BERNOULLI PROCESS



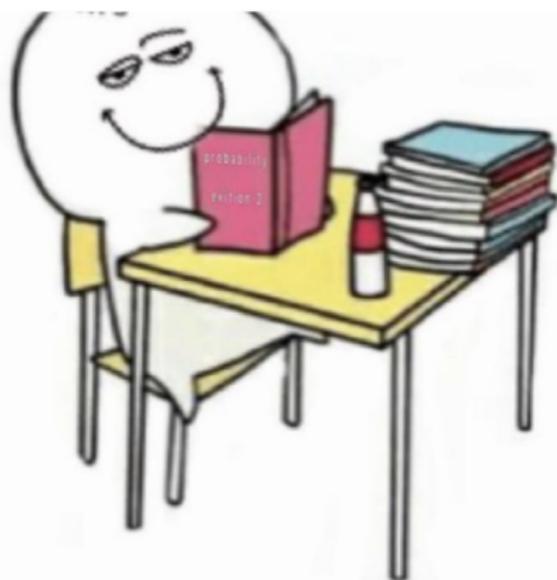
**SPLITTING AND MERGING BERNOULLI
PROCESSES ARE STILL BERNOULLI PROCESS**



**A BERNOULLI PROCESS
AFTER A STOPPING TIME IS
ALSO A BERNOULLI PROCESS**



**A SEQUENCE OF INDEPENDENT GEOMETRIC RV'S
CAN BE REFORMULATED AS A BERNOULLI PROCESS**



**possession process... so
interesting!**

The PROBABILITY of

ROYAL FLUSH in Texas Hold'em

Winning MEGA MILLIONS

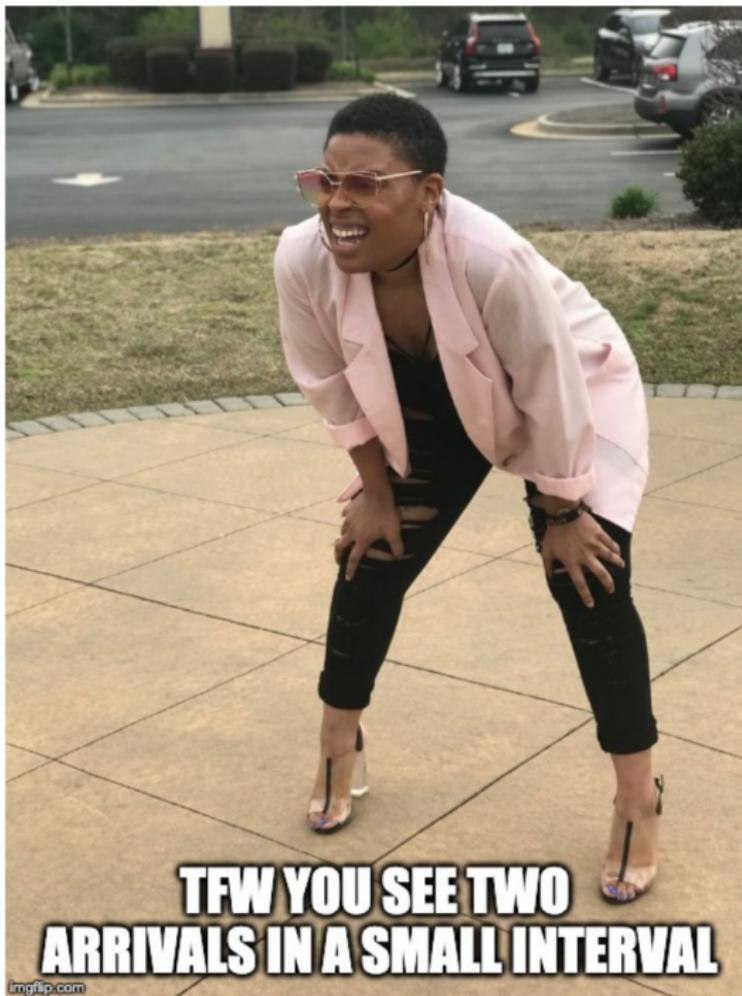


+



Is like you roll all 6s on 6 dices

Is like you roll all 6s on 11 dices



**TFW YOU SEE TWO
ARRIVALS IN A SMALL INTERVAL**



Understanding
the mathematical
definition of a
Bernoulli Process



Just thinking about
it like a bunch of
coin flips

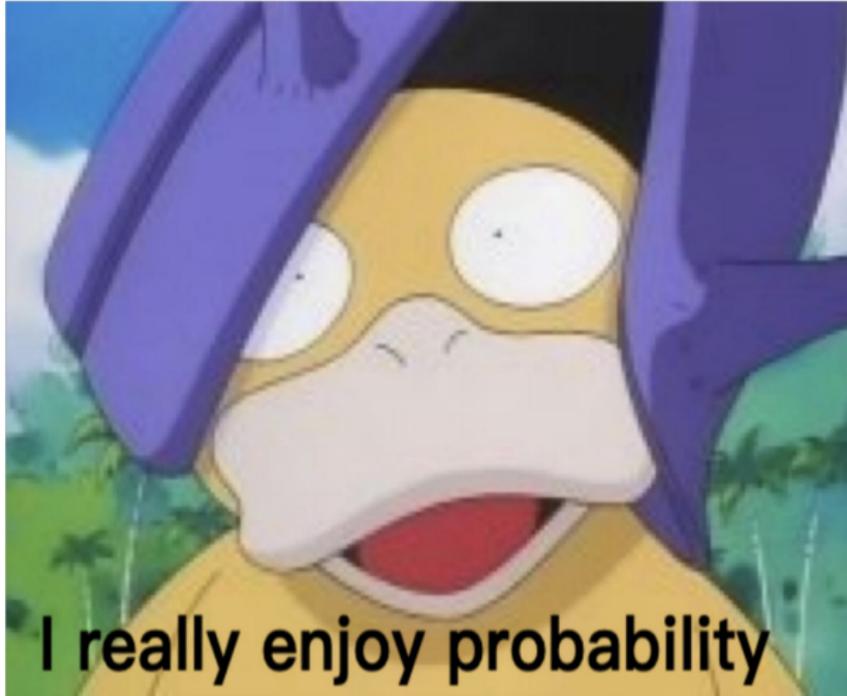


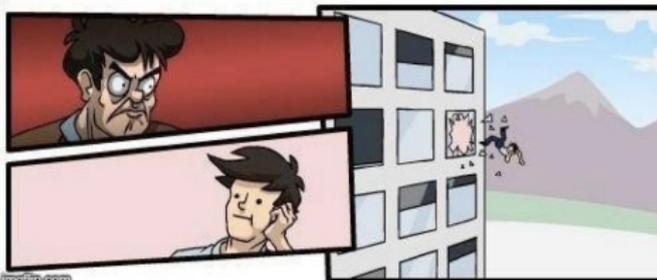
Thanos: "with the snap of this finger, 50% of the population will vanish, chosen at random."

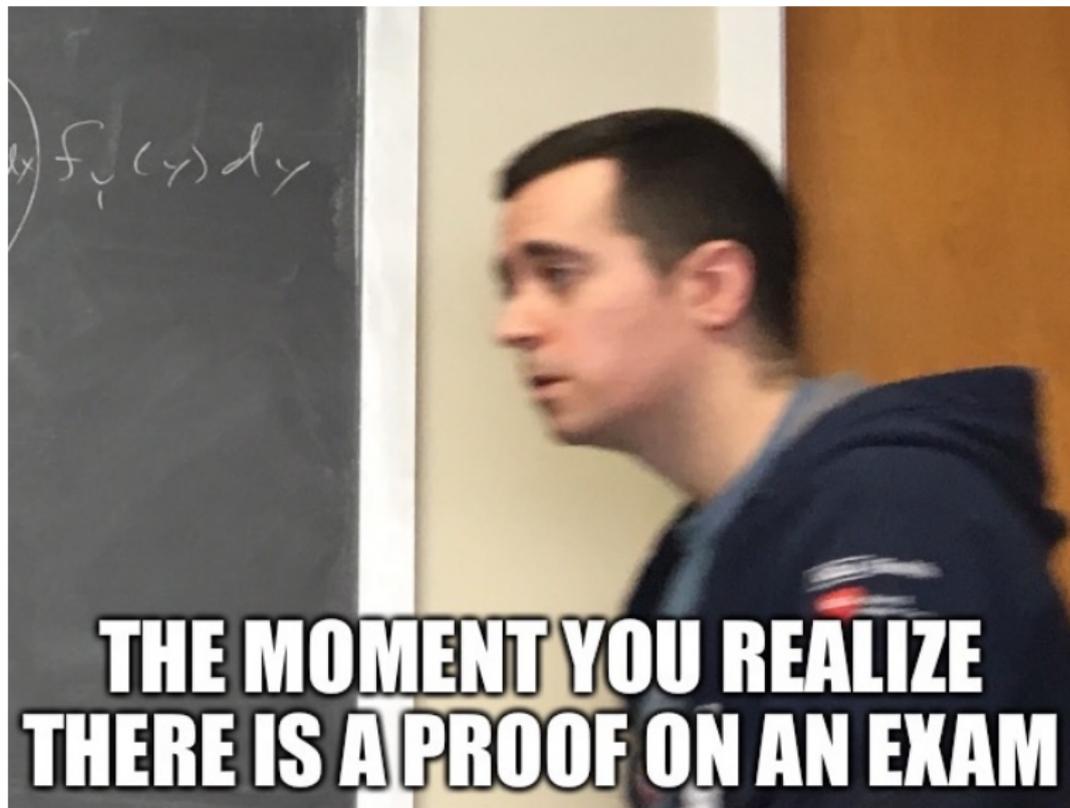
(Thanos snapped finger...)



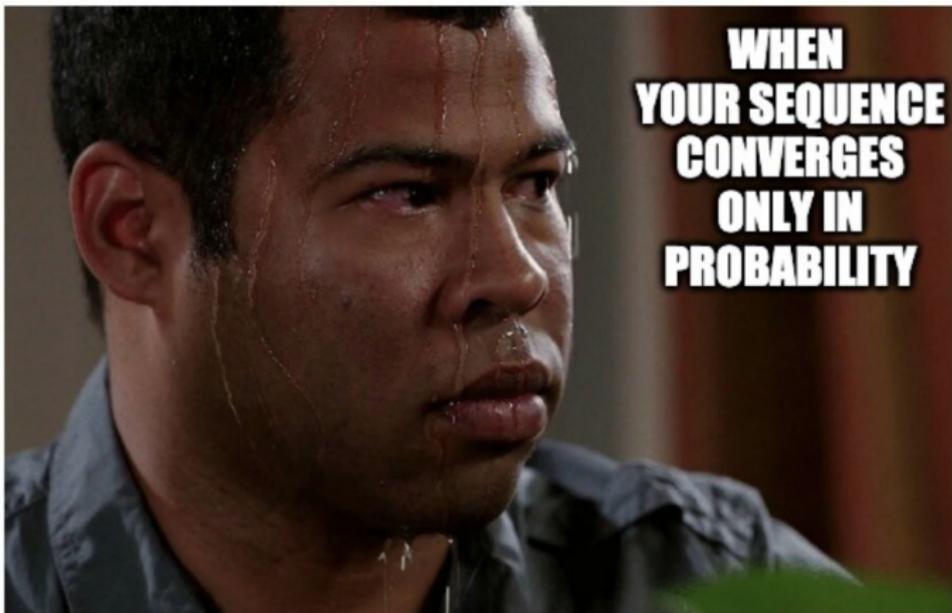
Thanos: "Oops... didn't survive the Bernoulli trials"



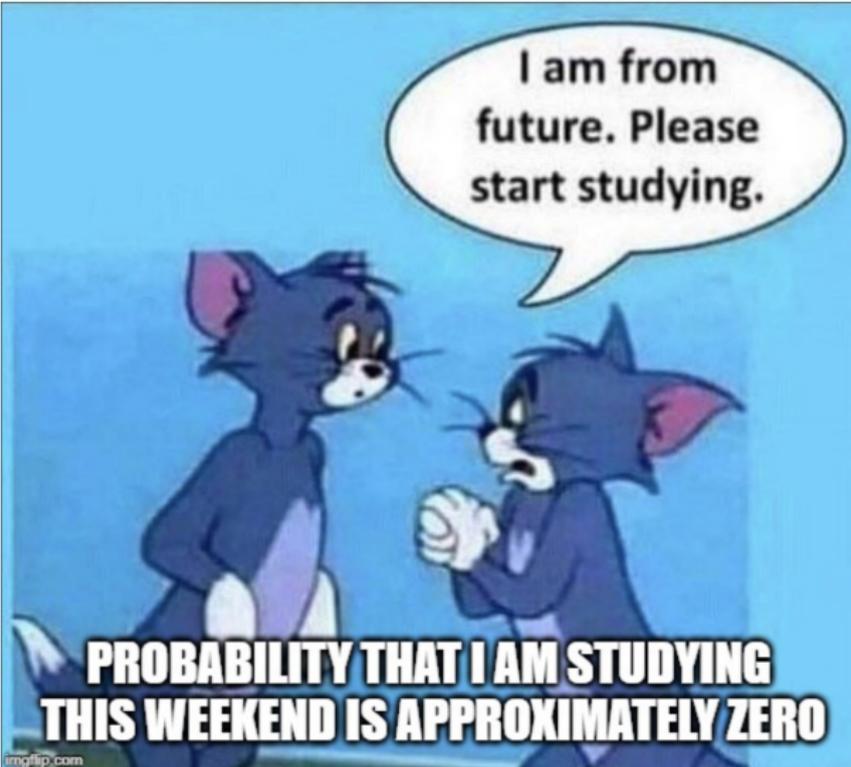




**THE MOMENT YOU REALIZE
THERE IS A PROOF ON AN EXAM**



**WHEN
YOUR SEQUENCE
CONVERGES
ONLY IN
PROBABILITY**



I am from
future. Please
start studying.

**PROBABILITY THAT I AM STUDYING
THIS WEEKEND IS APPROXIMATELY ZERO**



when a new HW posted

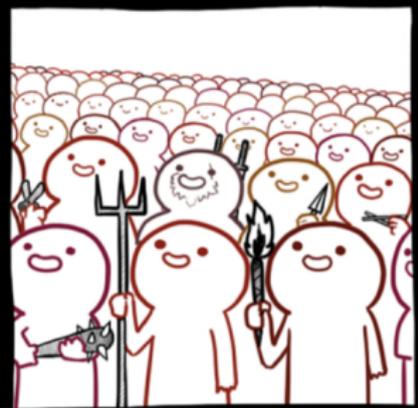
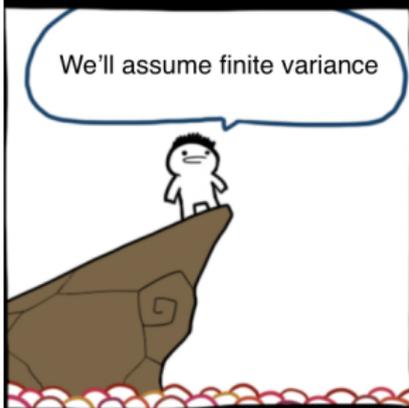
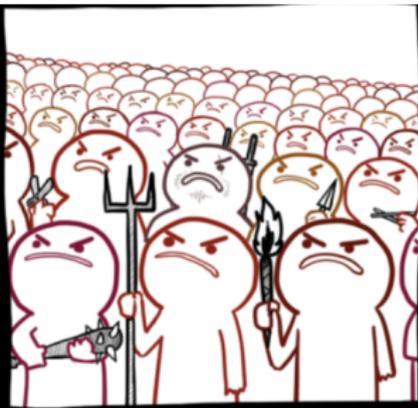
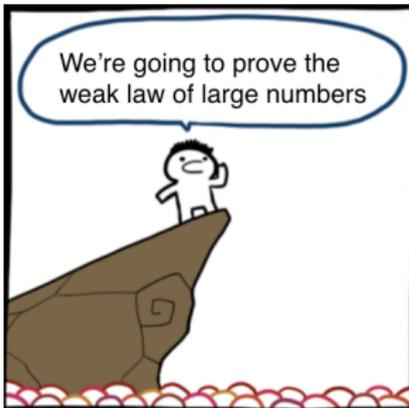


when the deadline extended

Nurse: Sir you've been in a coma since
week 3

Me: oh boy I can't wait to **continue to**
ignore the Poisson distribution





**WHEN THE ONLY TWO CONCEPTS
YOU LEARN FROM MATH170B ARE**

**"LET EPSILON > 0 BE ARBITRARY" AND
THE SQUARE REPRESENTING THE END OF A PROOF**

WHEN YOU ARE PROUD



OF YOUR POISSON

memecreatorapp.com



want to sleep
but need to learn 170B



The probability I can get an A
is $1/40, 2/40, \dots$. How about 1???



$\tan 90^\circ$



**ME FINALLY GOT
THE RIGHT ANSWER FOR
A PROBABILITY CALCULATION**

After two
probability course



It's time to
make a big deal!

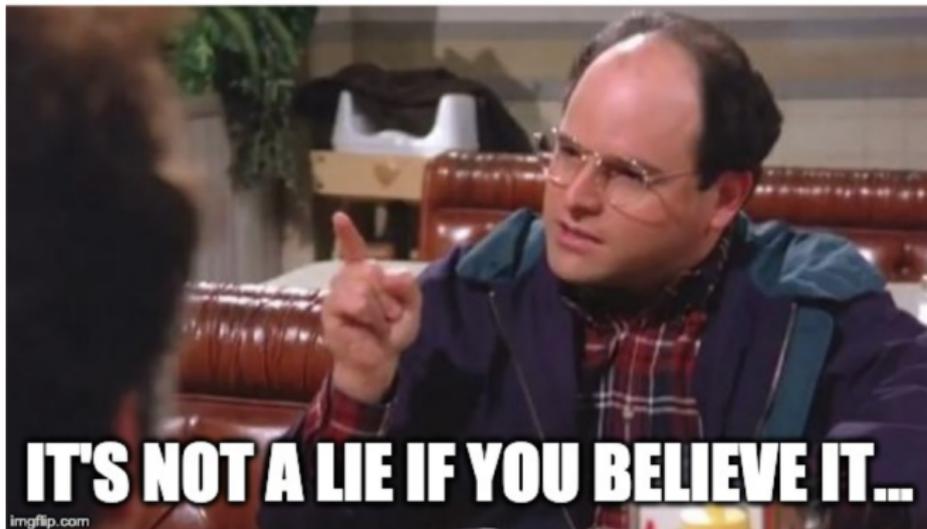


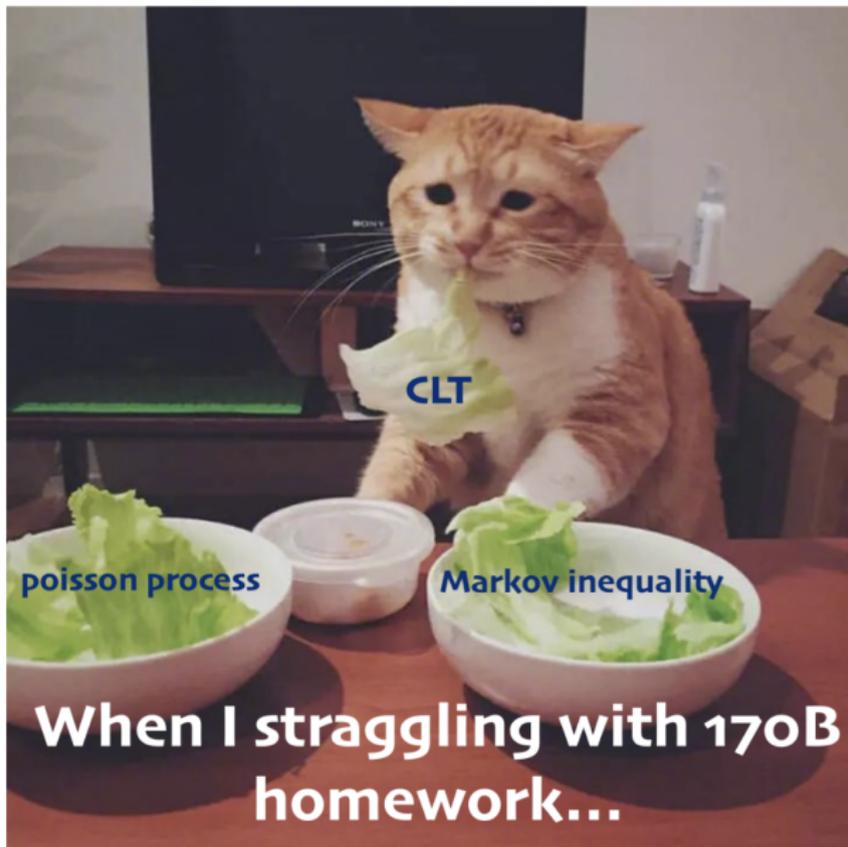
Several rounds later....



Probability theory
cannot save you from
bad luck

When you condition on sets of probability zero



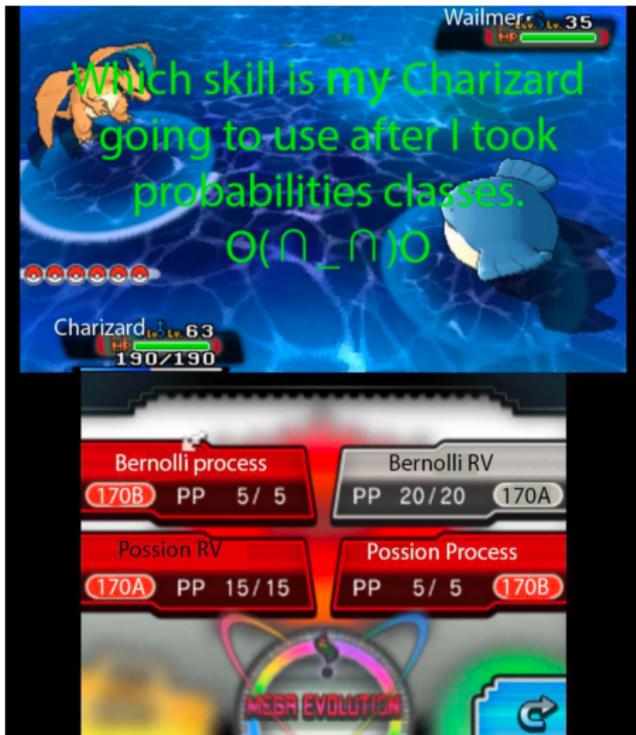


poisson process

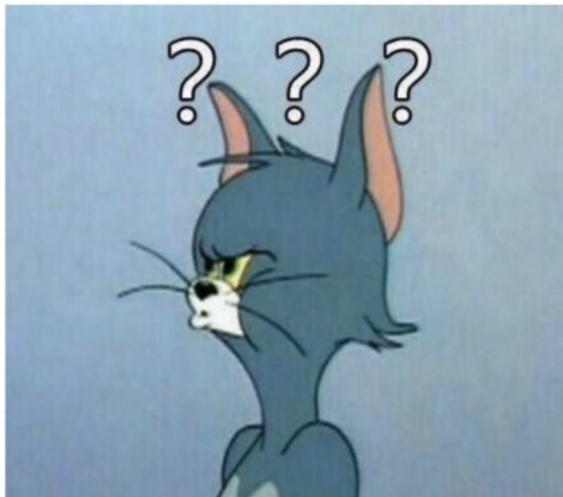
CLT

Markov inequality

When I stragglng with 170B homework...



What's the probability to
pass the test?



$P(A_n \text{ i.o.})$ if $\sum_n P(A_n) < \infty$