Venn Diagrams

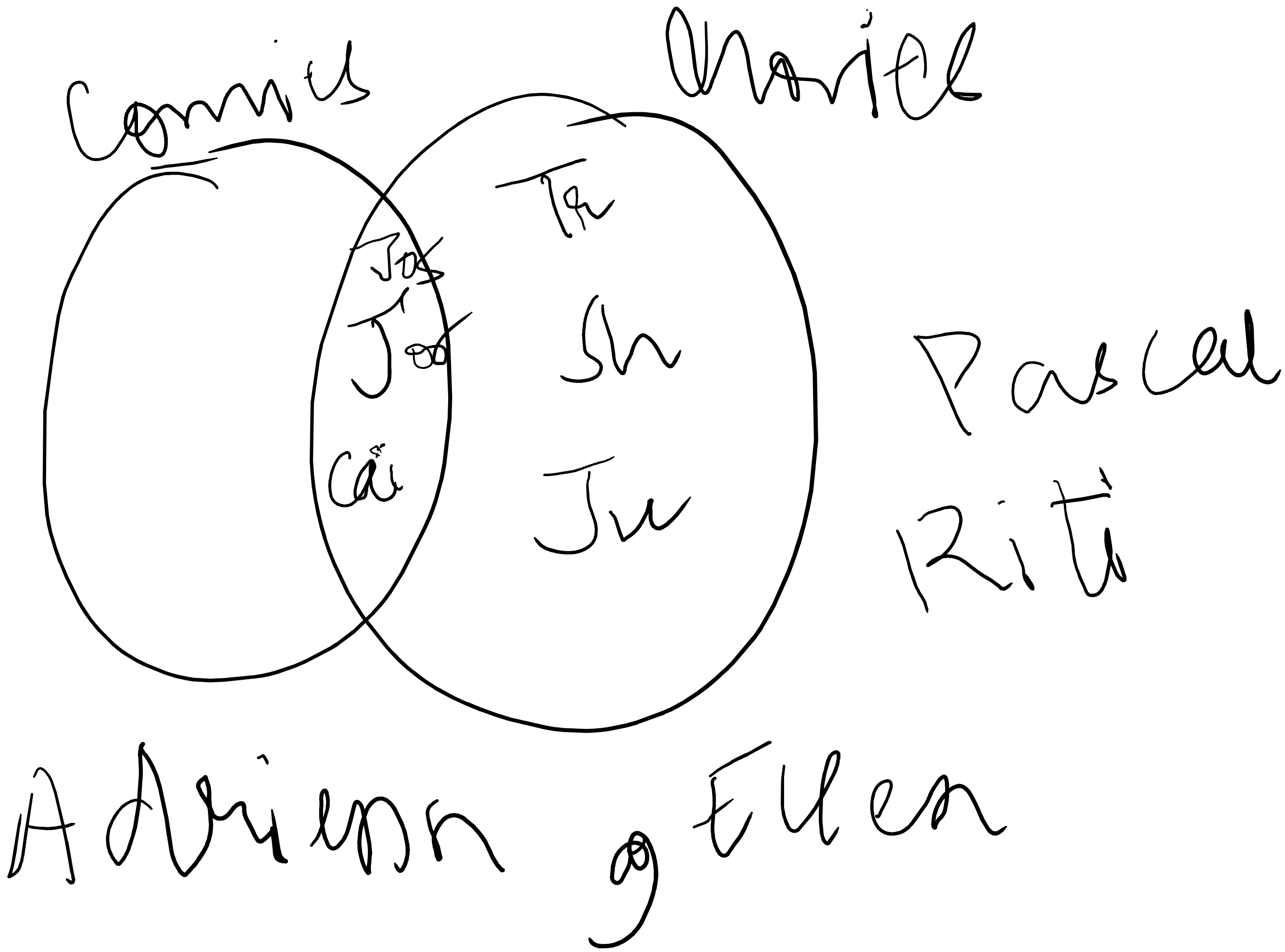
What makes something a fruit, vegetable, or root?

So, what is a tomato? A strawberry? Banana?

Batman!!!!

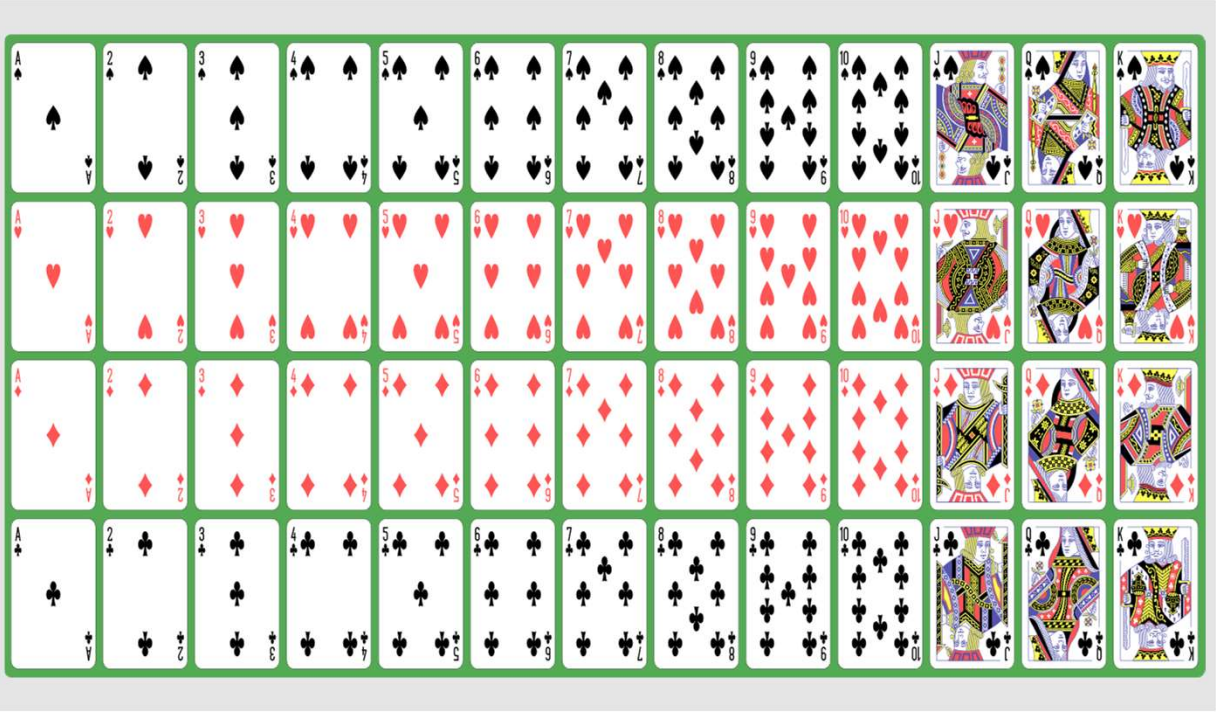
- How many of you have read the comics? Watched the movies?

Comics	Movies
Jordan Joshua Caitlin	Shriya Tyler Judson

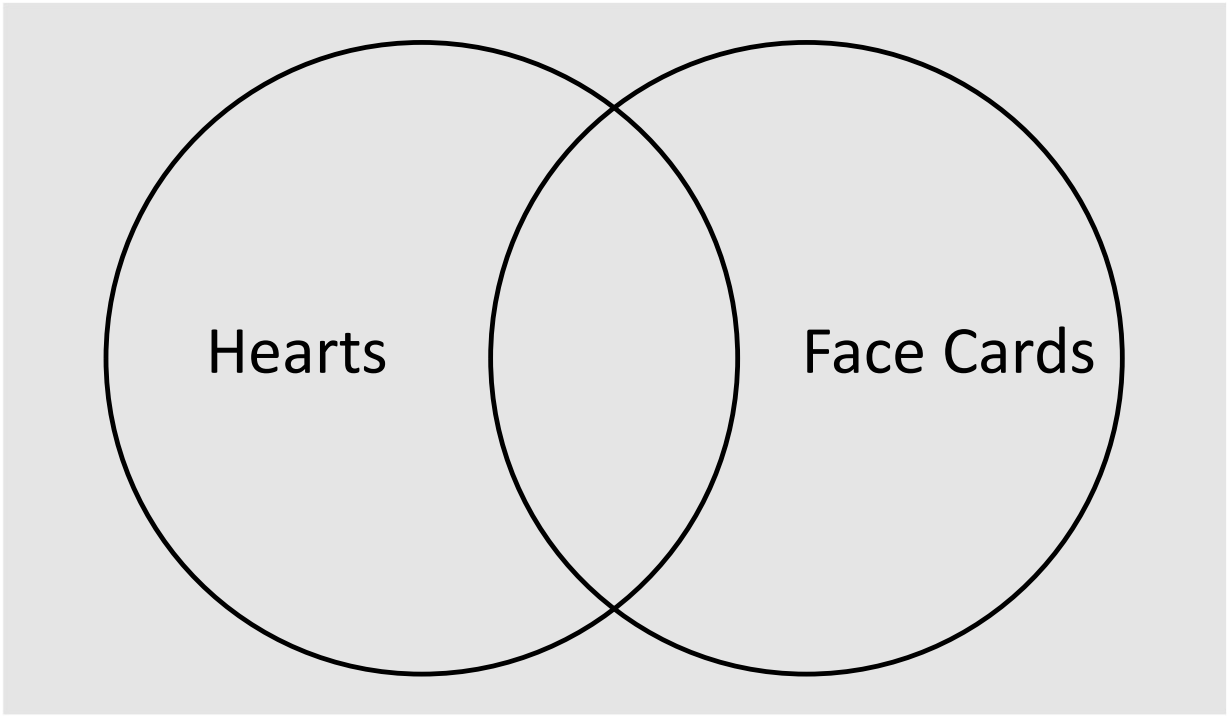

Comics
Marvel
Tr
Sh
Ju
Pascal
Rita
Adrienn
Ellen

Breakout Rooms

Cards and Venns



- A deck of cards contains 52 cards, named from 2 to 10. We also have the Jack, Queen, King (called face cards), and Ace cards.
- Each card can be one of 4 suits: Hearts, Diamonds, Clubs, and Spades.



Complete this Venn

- Fill the number of cards in each part!

Probability again

- A friend picks a card at random and tells me it is a picture card.
- What is the chance it is ***also*** a heart card?

Probability thrice

- In a game, I win if I draw a **heart** card, or a **face** card, or **both**
- My friend says:
  - The chance of getting a heart is 13/52
  - The chance of getting a picture card is 12/52
  - So the chance of winning this game is 25/52!
- Is my friend wrong? Why?

Comparing probability

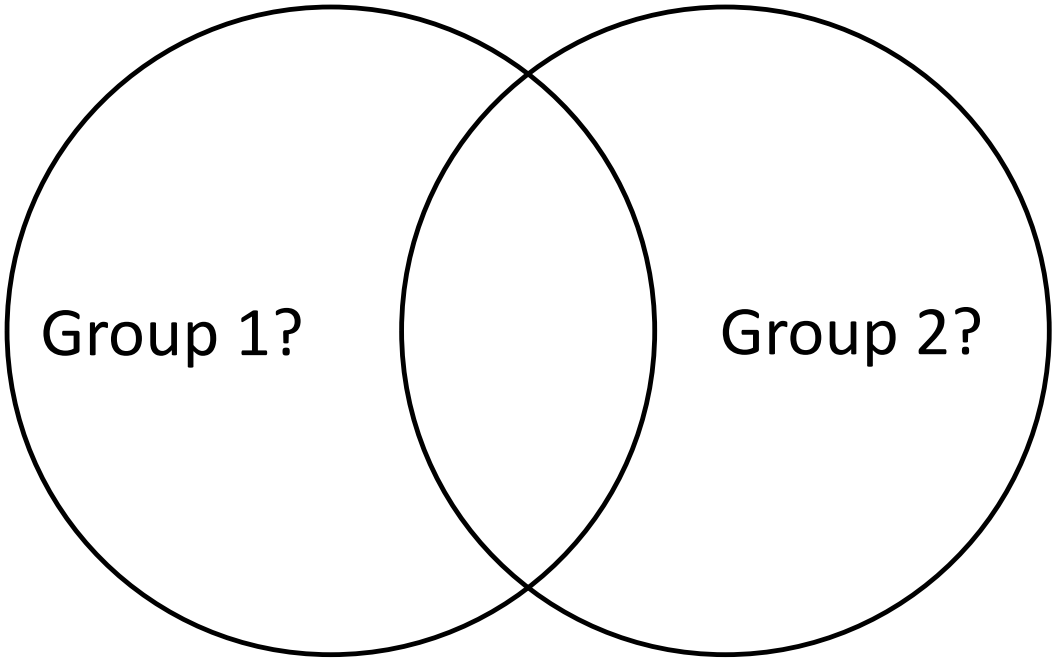
- What is the actual chance of winning?

- Is this a bigger or smaller chance of losing?

Manager, is that you?

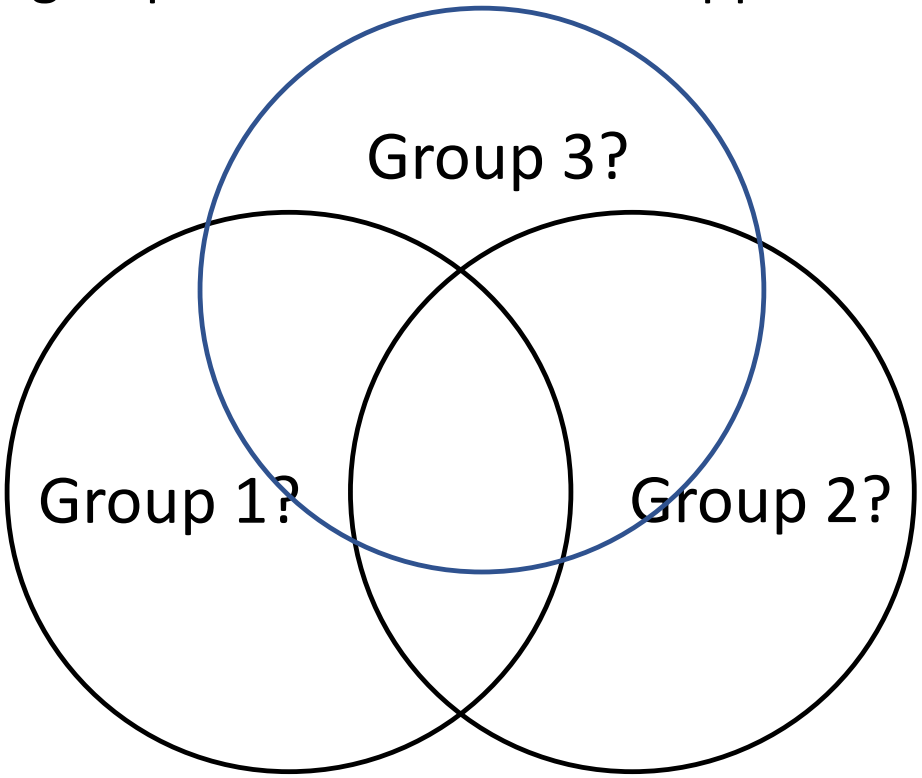
Remember Hilbert's Hotel?

What overlapping groups can you come up with from the room numbers?



Manager, is that you?

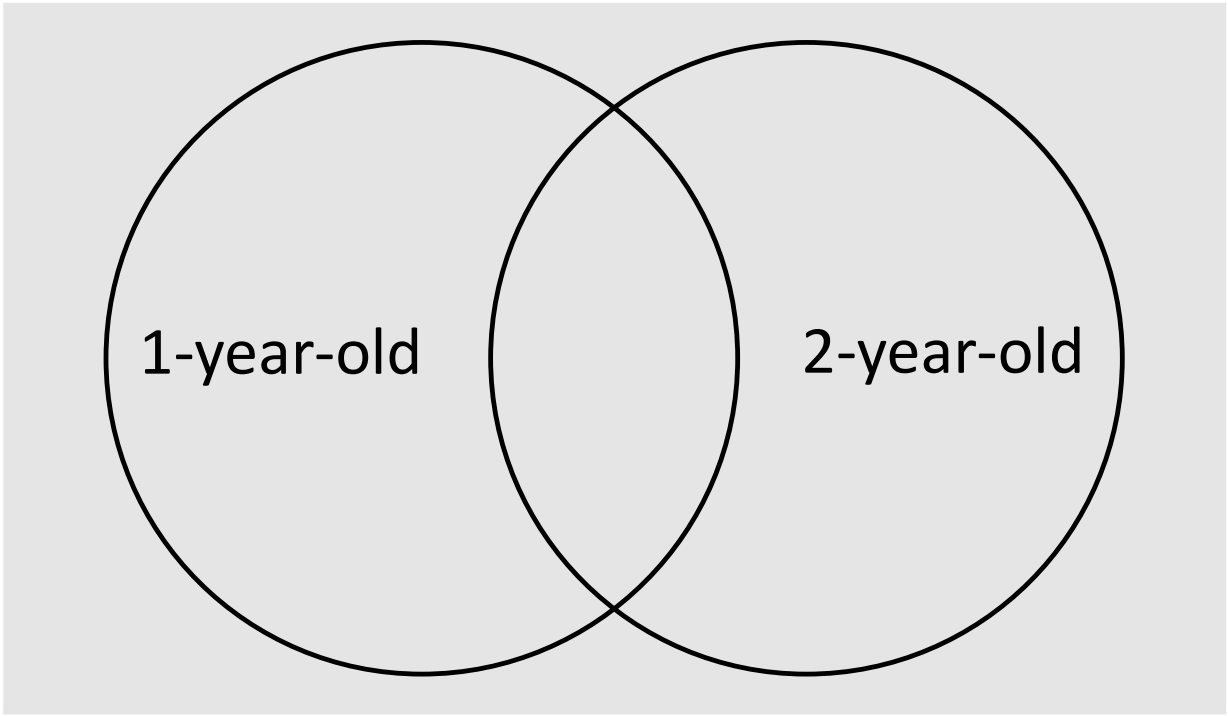
Can we add a 3rd group to the mix? What happens to the intersection?



Parental Venns

In a parent and toddler group, 15 parents have a 1-year-old, and 12 parents have a 2-year-old

Since 15+12=27, does that mean there are 27 parents?



Parental Venns

- Let's say there are 20 parents. Fill in the Venn diagram to show how many parents there could be in each part.

Parental Venns

- A parent is chosen at random.

- What is the chance they have a 1-year-old AND a 2-year-old?
- What is the chance they do not have a 2-year-old?
- What is the chance they have a 2-year-old, but NOT a 1-year-old?
- Of the parents with 2-year-olds, what fraction ALSO has a 1-year-old?

Challenge 1!!

- In a group of 100 customers at Big Red's Pizza Emporium(or use your favourite pizza place!), 80 of them ordered mushrooms on their pizza and 72 of them ordered pepperoni. 60 customers ordered both mushrooms and pepperoni on their pizza.

- A) How many customers ordered mushrooms but no pepperoni?
- B) How many customers ordered pepperoni but no mushrooms?
- C) How many customers ordered neither of these two toppings?

Challenge 2!!

- At Dan's Automotive Shop, 50 cars were inspected. 23 of the cars needed new brakes, 34 needed new exhaust systems, and 6 cars needed neither repair.

- A) How many cars needed both repairs?
- B) How many cars needed new brakes, but not a new exhaust system?

Challenge 3!!

- A survey of 85 students asked them about the subjects they liked to study. 35 students liked math, 37 liked history, and 26 liked physics. Twenty liked math and history, 14 liked math and physics, and 3 liked history and physics. Two students liked all three subjects.

- A) How many of these students like math or physics?
- B) How many of these students didn't like any of the three subjects?
- C) How many of these students liked math and history but not physics?

Challenge 4!!

- A group of friends have been surveyed: 38% have been to Canada, 80% have been to France, 11% have been to neither Canada or France.

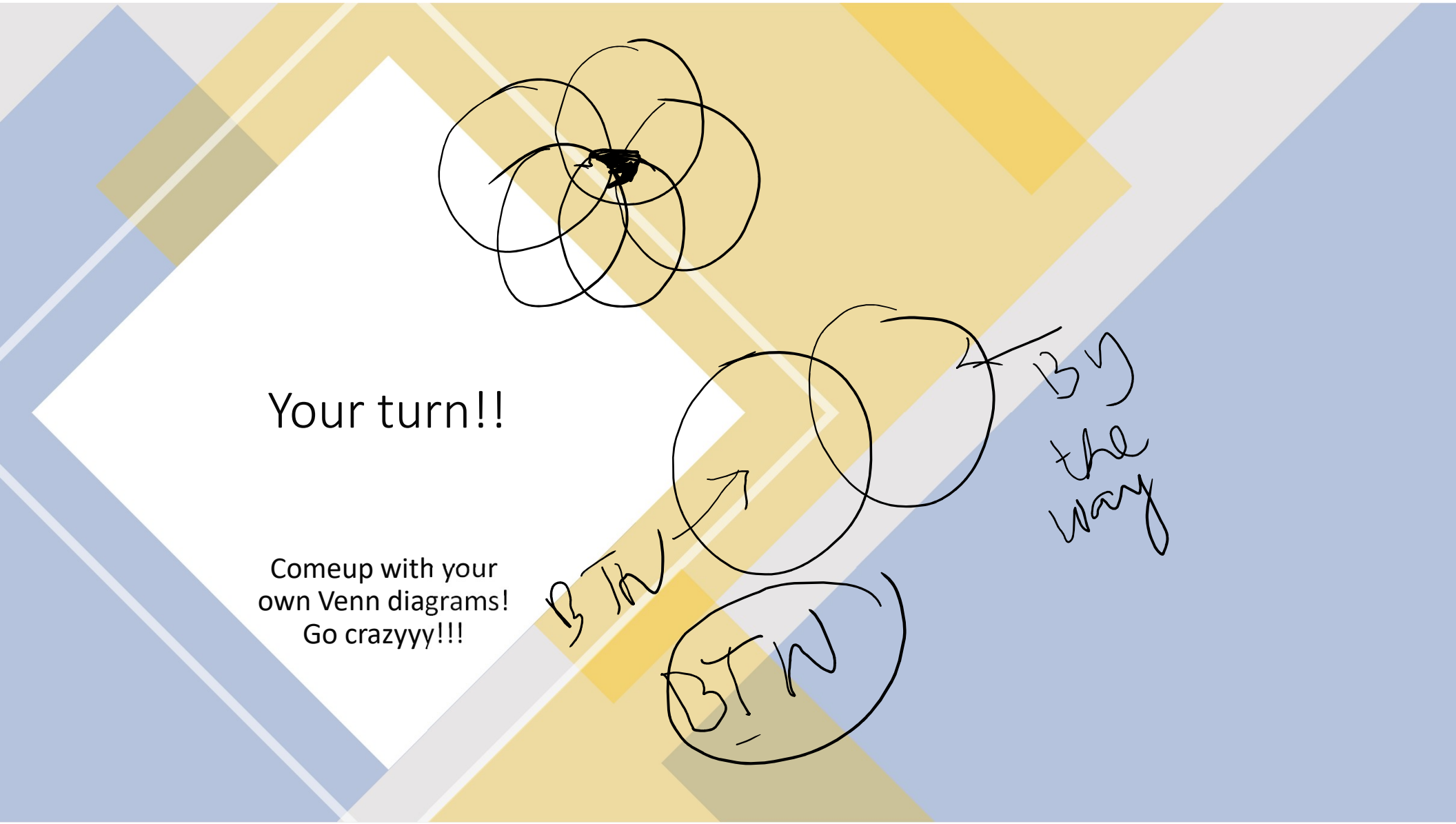
- Find the percentage of the group that have been to Canada and France.

Your turn!

Can you come up with categories that divide a given set into equal groups?

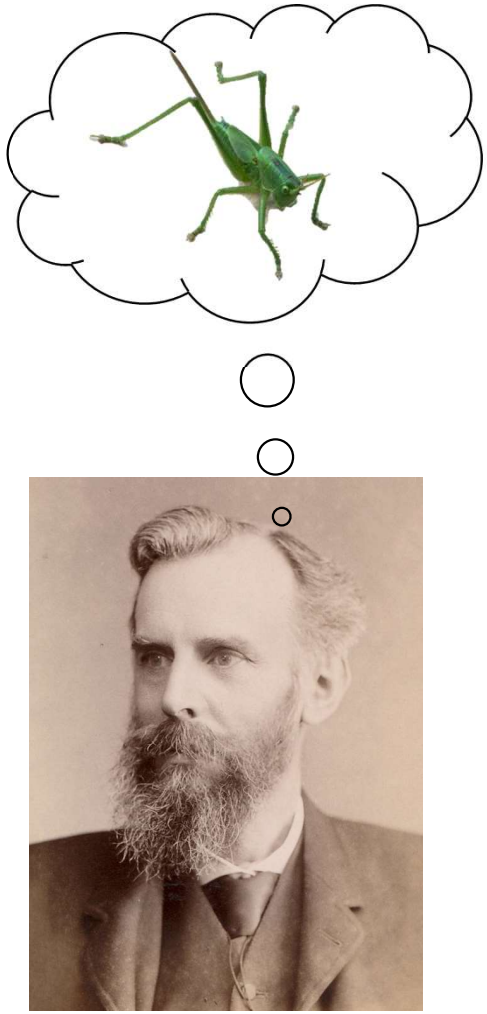
Your turn!!

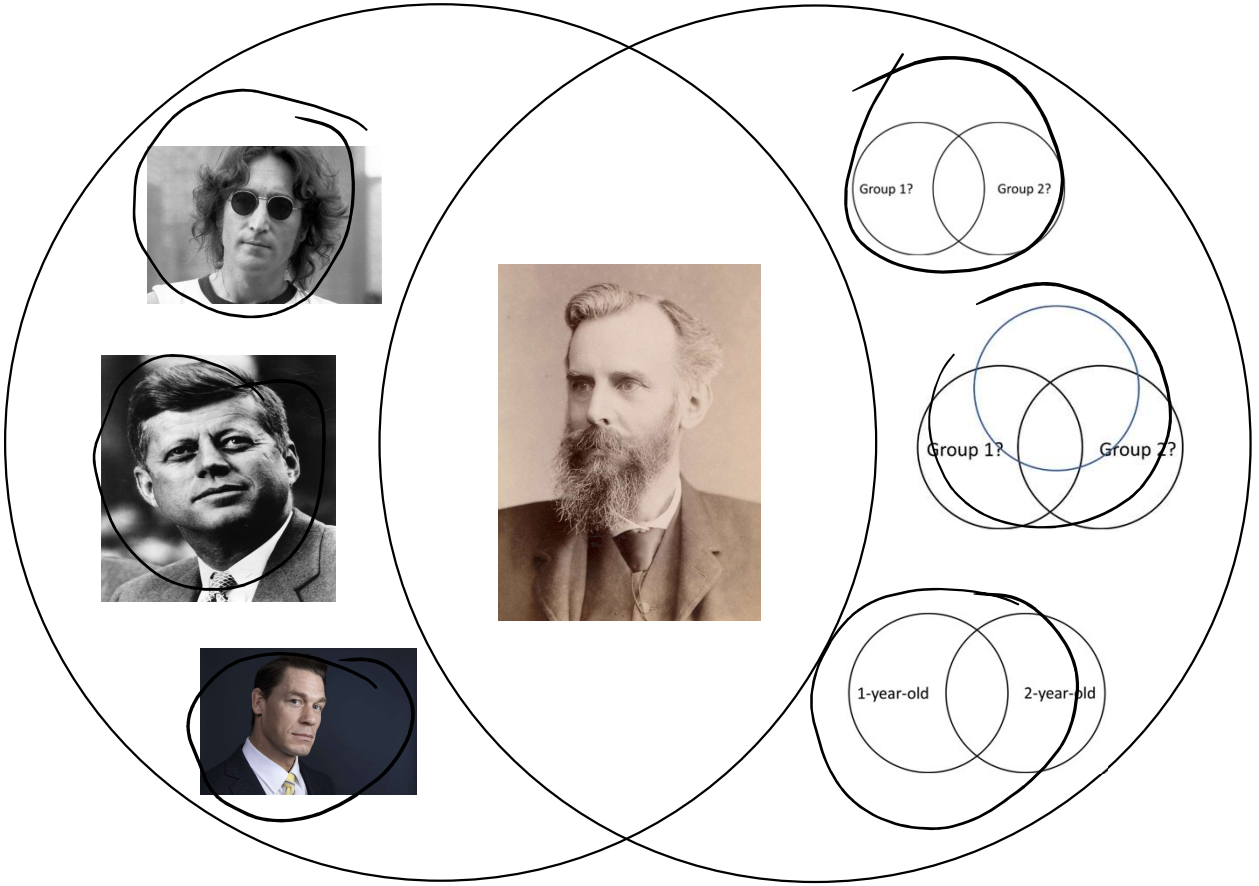
Comeup with your own Venn diagrams! Go crazyyy!!!



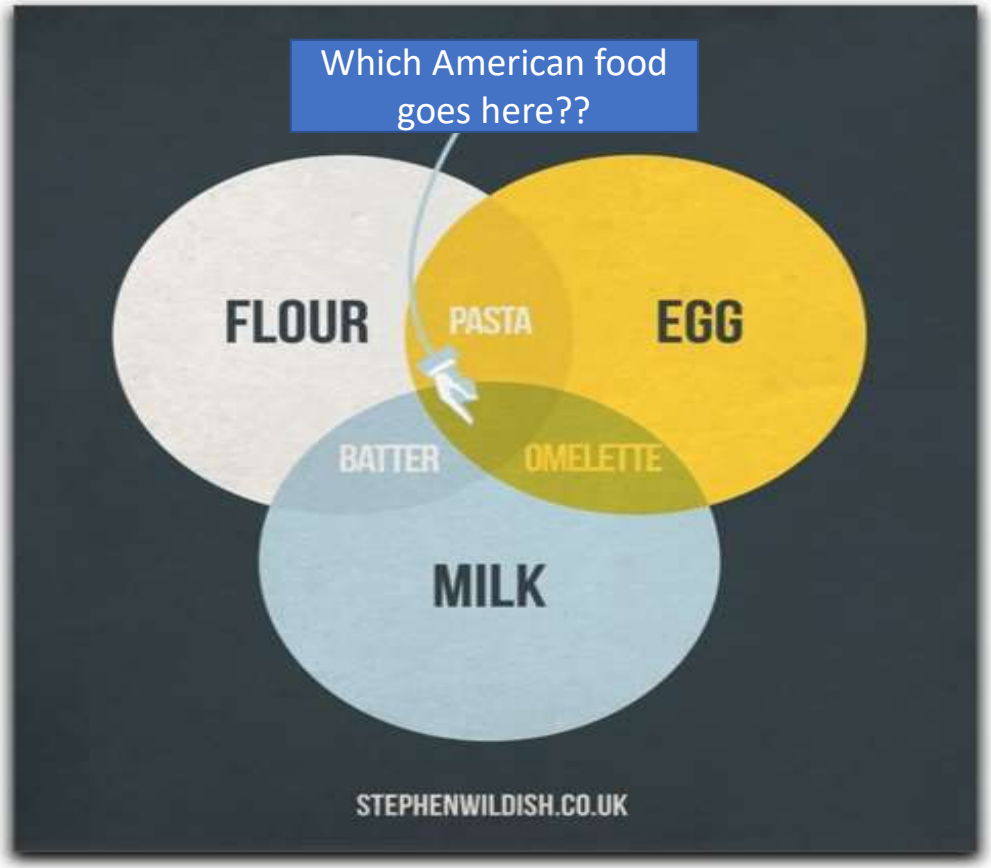
John Venn

- John Venn was a British mathematician, logician, and cricket player
- He invented many things:
  - Venn diagrams
  - Probability
  - Automatic ball throwing machines
- He thought probability should be math, and not guesses
- He also made Venn diagrams to help himself teach
- His ball throwing machine struck out many famous cricket players
- (All of these are true!)

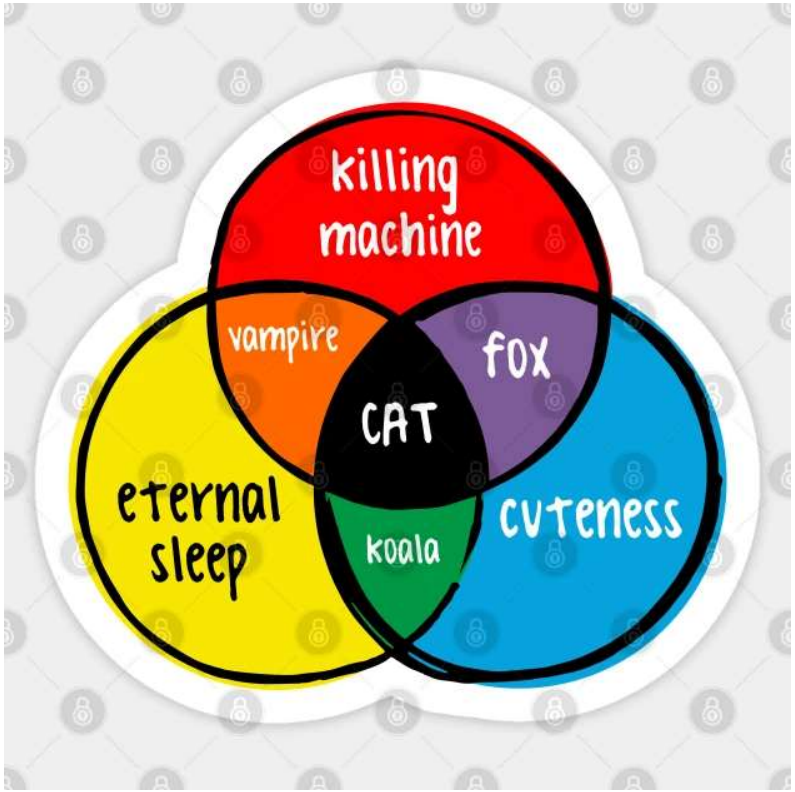


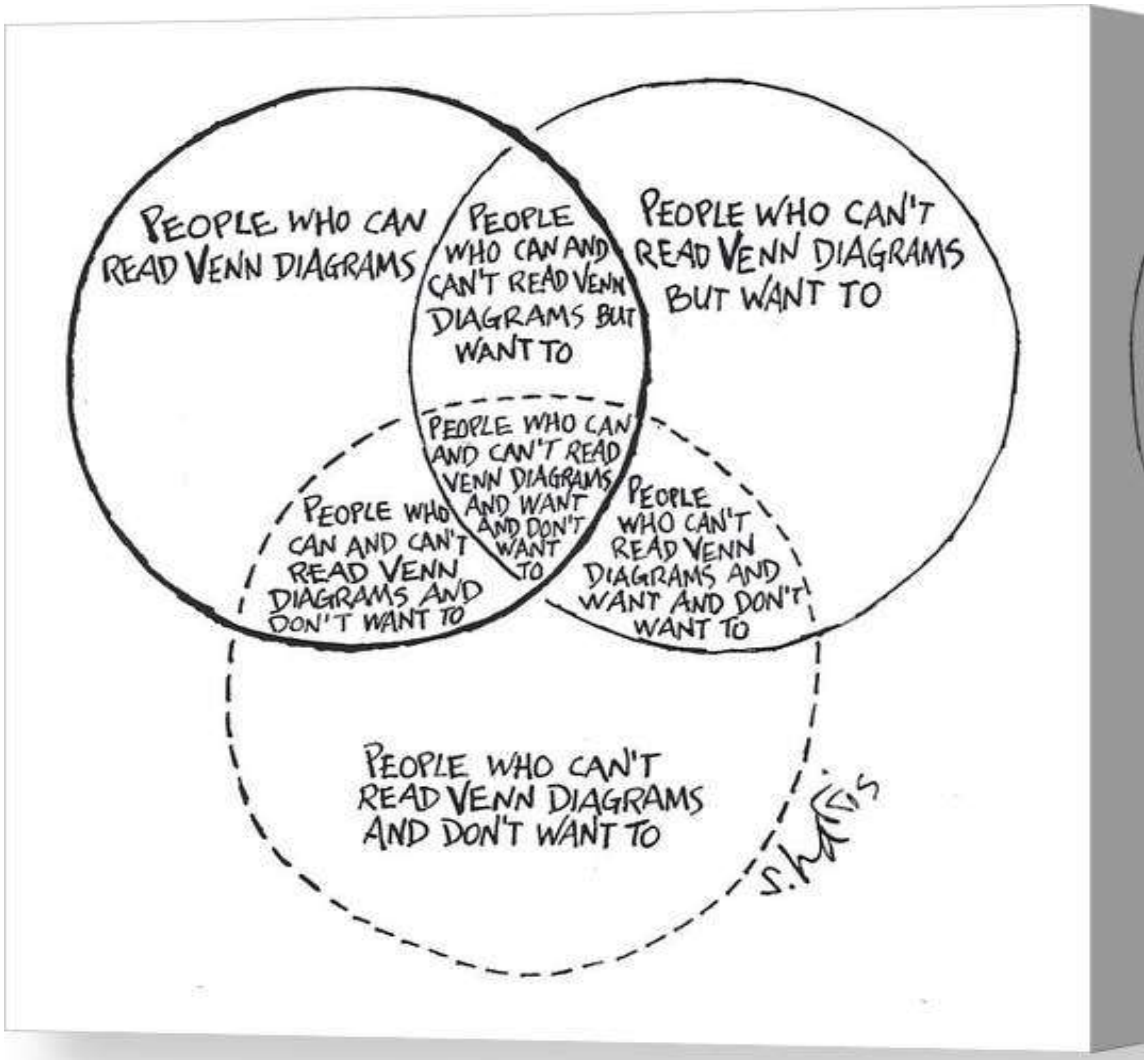

Group 1?
Group 2?
Group 1?
Group 2?
1-year-old
2-year-old

Funny Venns pt.1

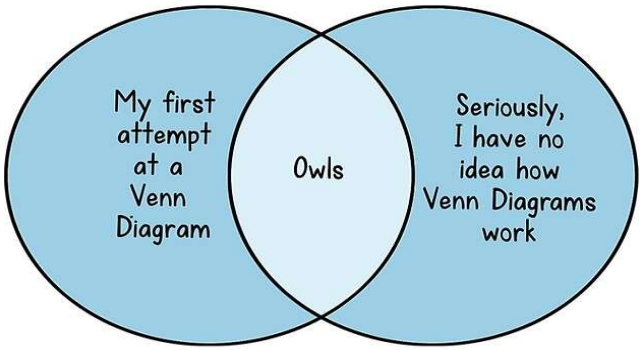


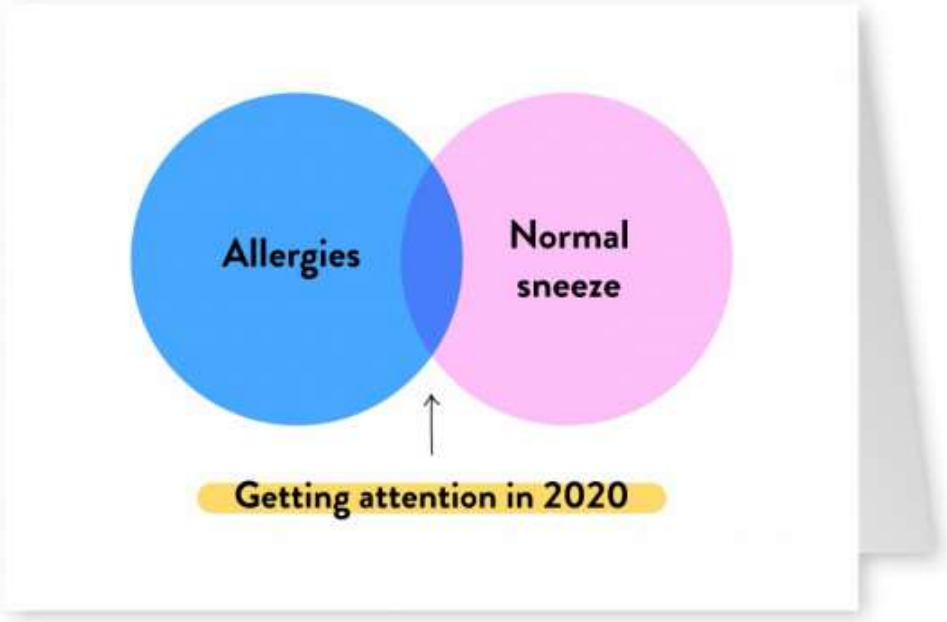
Funny Venns pt.2





Funny Venns pt.3





Thank you!!