

# By Nyander Wheeler

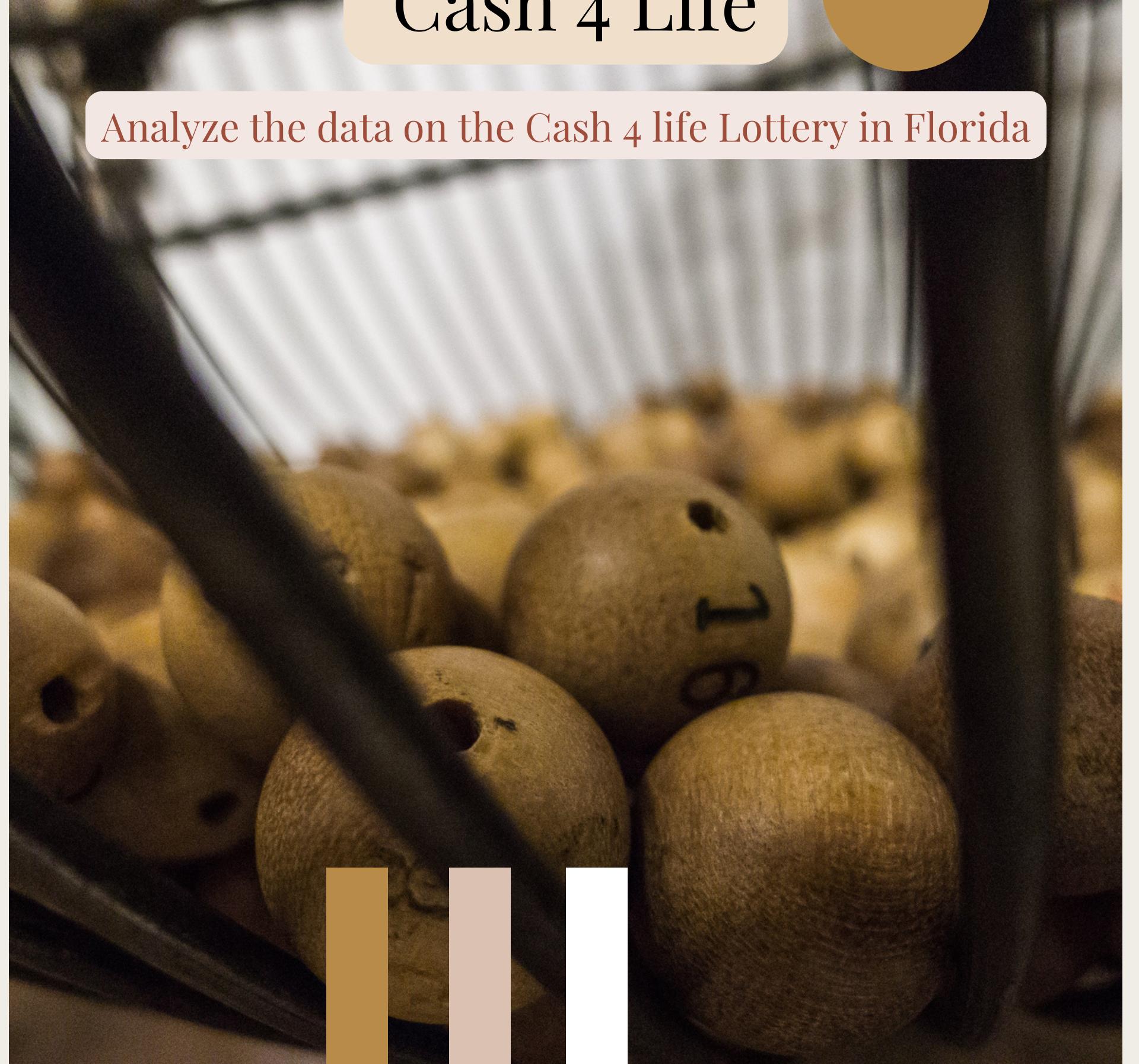
# Data Science Program

at Entity Academy

FINAL PROJECT

Cash 4 Life

Analyze the data on the Cash 4 life Lottery in Florida



# Who is Nyander

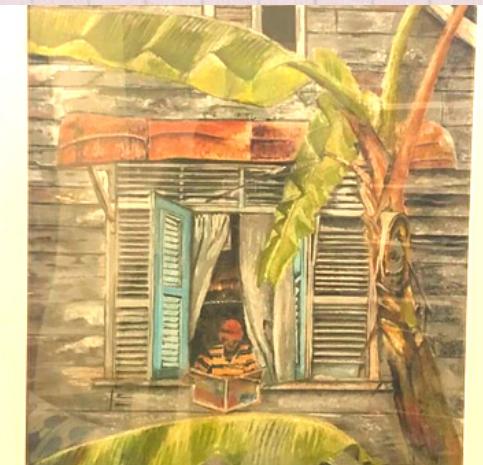
Get to know me



About me

1

I am based  
in  
Florida.



2

I am  
creative.

3

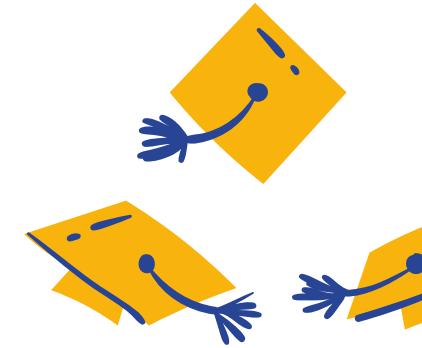
I am a  
designer



4

I am  
analytical

That is why I went to  
Architecture school vs  
Art school.



Education

1

2011  
Bernard and Anne Spitzer  
School of Architecture at  
City College of New York

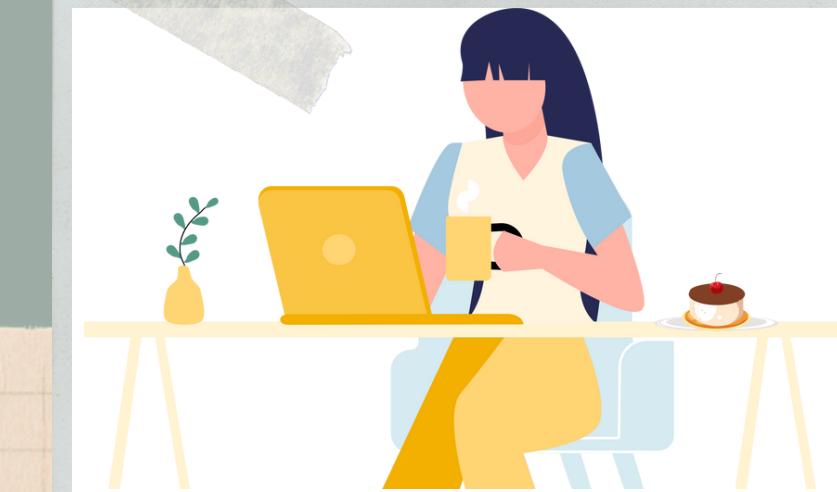
2

2020  
McDougle Technical Institute  
for Facial Specialty

- Art was always my passion but slowly the beauty industry

3

2022  
Entity Academy for Data  
Science



Employment

1

2013- 2021  
Worked in some version of a  
technical drawing job, working  
with Architects and engineers.

2

2021- 2022  
Work as a n Esthetician at  
Amazing Lash Studio

- Started in 2017
- Cash 4 Life Florida (it is a multistate game)
- It is a gambling company
- For 2 dollars you can play to win

### How to play?

- Pick 5 numbers between 1 and 60 and pick one number out of 4 for the Cash ball.
- The numbers can be manually selected or via Quick pick
- Drawings are held 9pm Eastern time, daily.
- Initially drawings were done Monday and Thursday then it went to everyday.

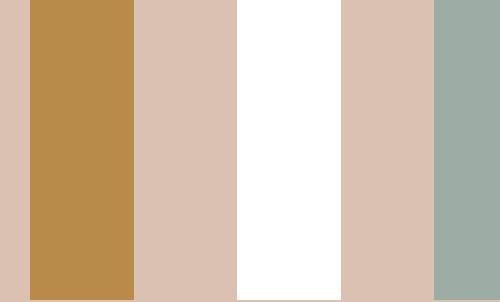
### How to win?

Match all five numbers and the cash ball to win the top prize which is \$1000/ day or second best, when you match only the five numbers to win \$1000/week.

What is  
C4L ?

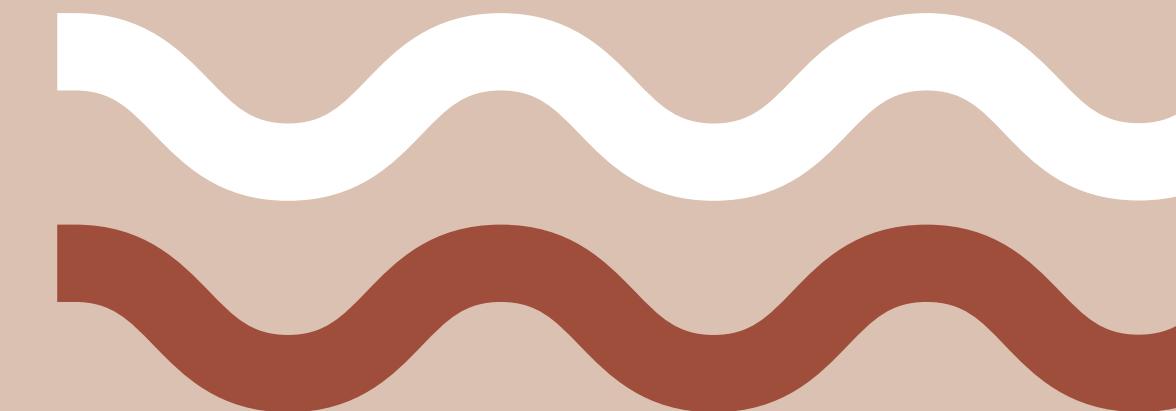
# Why Cash 4 Life Florida?

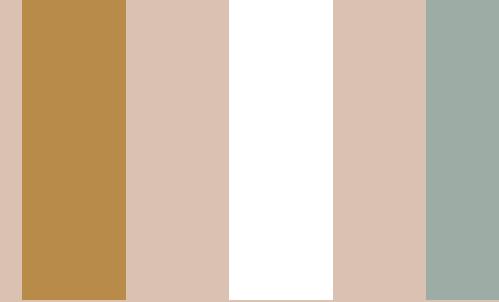
- I play it occasionally
- Public access to drawn numbers from the inception
- Curiosity to find any trends in the data
- Use the skills I learned and discovered to better understand my style of analytical thinking.



# Final Project Summary

- I was hired by an Applications venture company, Illa Venture.
- Find the next new best applications.
- For this application they want to make an app that can spill out numbers to users for lottery plays that is based on data.
- I will also look at patterns over the years and present it to stakeholders.





# Final Project

## Break down

### Evaluation Questions 1 -3

**NO**

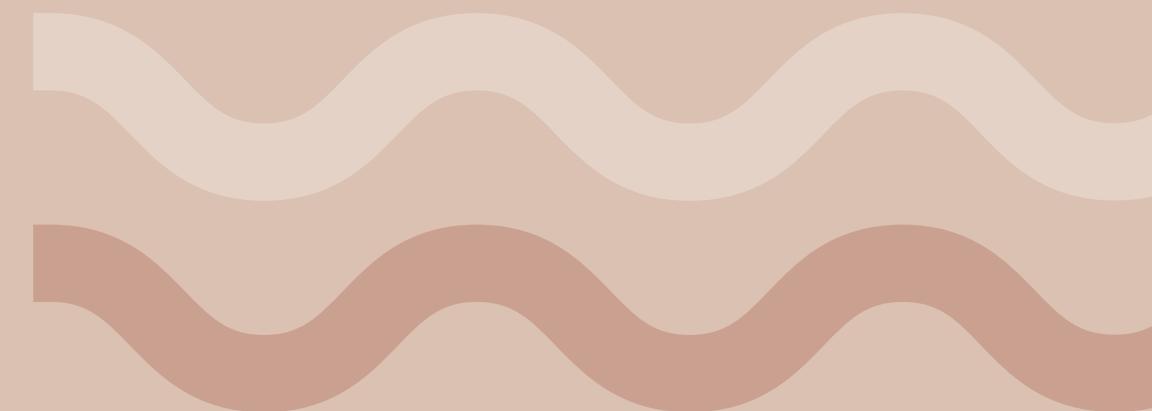
1. Can the data help me predict what three numbers (or 50% of the numbers) will play correctly 100% of the time?

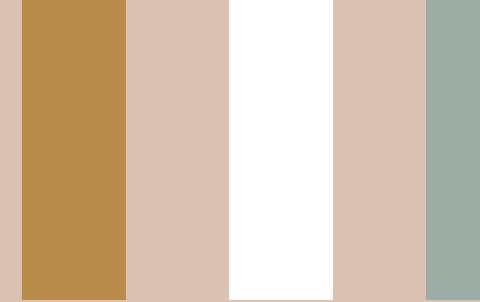
**NO**

2. Can it help me predict what six numbers (the total) will play correctly 50% of the time?

**NO**

3. Are there 5 numbers that have played together more than once for each new draw?

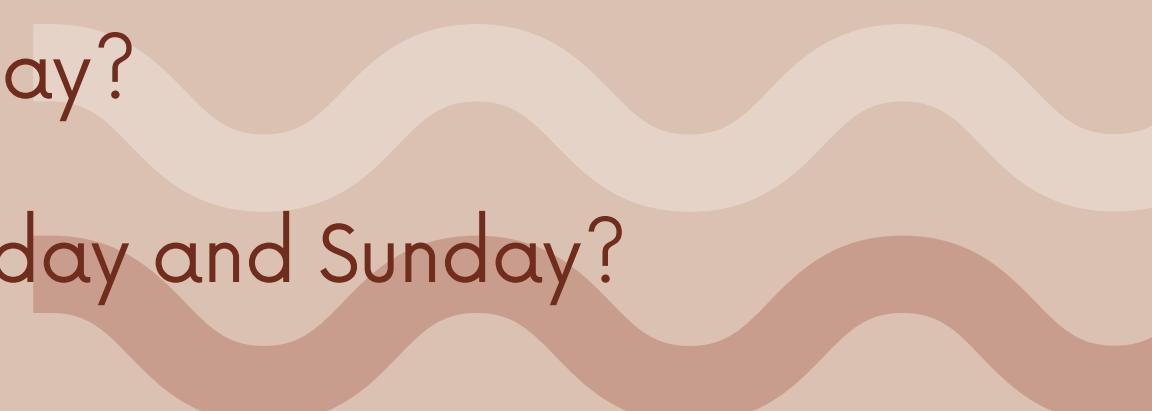




# Final Project

## Break down

### Evaluation Questions 4-8

4. Are there 3 and 4 numbers that have played together more than once for each new draw and what are they?
  5. What Cash Ball (CB) number is the most popular/ played the most?
  6. What numbers were played the most out of the 5 numbers?
  7. What 5 numbers were played the most on Saturday and Sunday?
  8. What 6 numbers were played the most including CB on Saturday and Sunday?
- 



Let us begin

ANSWER EVALUATION QUESTIONS

## 1 Gather the Data

The screenshot shows the Florida Lottery website's "PLAY" section. At the top, there's a navigation bar with links for PLAY, WIN, PROMOTIONS, SUPPORT EDUCATION, PLAYER'S GUIDE, and DO BUSINESS WITH US. Below this is a large orange banner with the word "PLAY" in bold black letters. Underneath the banner, there's a "Social Hub" with links to Facebook, Twitter, Instagram, and YouTube. On the left, a sidebar titled "PLAY" lists various lottery games: Draw Games (Powerball, Mega Millions, Florida Lotto), Cash4Life (Winning Numbers, How to Play & How to Win, How to Claim, Watch the Drawings, Frequently Asked Questions), Jackpot Triple Play, Cash Pop, Fantasy 5, and Pick 5. The main content area features a large "CASH 4LIFE" logo. It displays the winning numbers for Tuesday, September 20, 2022: 1, 10, 28, 44, 45, 4. The next drawing is listed as Wednesday, September 21, 2022. Below this, a table shows the draw details: PRIZE LEVEL WINNERS\* CASH4LIFE PRIZE\*\* 5-of-5 + CB 0 \$1,000/Day For Life. To the right, there's a search bar titled "Search Cash4Life" with fields for "Search By: Date" and "Select a Date (mm/dd/yyyy)", and buttons for "Submit" and "Reset".

- Downloaded all the data showing numbers picked from February 20th, 2017 (The beginning) - August 24th, 2022.
- Initially numbers were drawn Monday and Thursday until, Monday, July 1st, 2019, it began to draw every day, 7 days a week.
- Finally, created a data set using the information in excel.

## 2 Data Wrangling

- 1.Merged data sets
  - Original variables were, date, pick1, pick2, pick3, pick4, pick5 and Cash ball.
  - Added data set with variables: Winner locations, Lottery Retailer, Retailer City, Prize, Payout Option, Prize Amount, Quick Pick, Winning Tickets.

- 2.Made new columns:
  - Weekday
  - Winners

- 3.More data wrangling was done once I explored the data.

## 3 Exploration

- Reviewed evaluation questions.
- Asked frequency questions for all variables.

Pick 1

2

Played

CB

3

Pick 1

12

Pick 2

21

Pick 3

23

# Duplicate plays

TOP  
NUMBERS

Pick 1

Pick 2

Pick 1

Pick 2

Pick 3

Pick 4

1

5

7

8

16

20

Played

12

Played

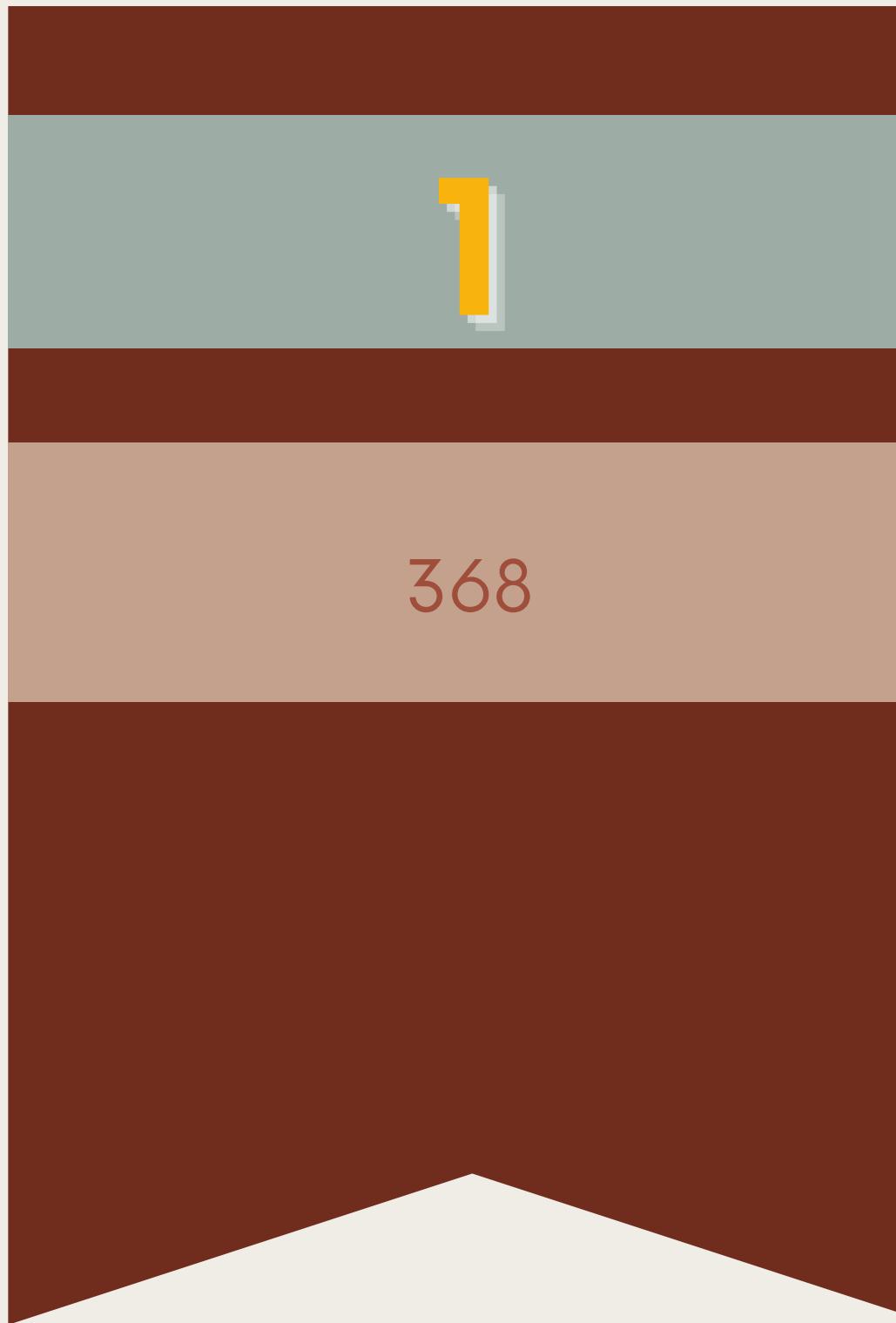
2

## Evaluation question 4

Are there 3 and 4 numbers that have played together more than once for each new draw and what are they?

## Evaluation question 5

What Cash Ball (CB) number is the most popular/was played the most?



# MOST PLAYED

## CASH BALL

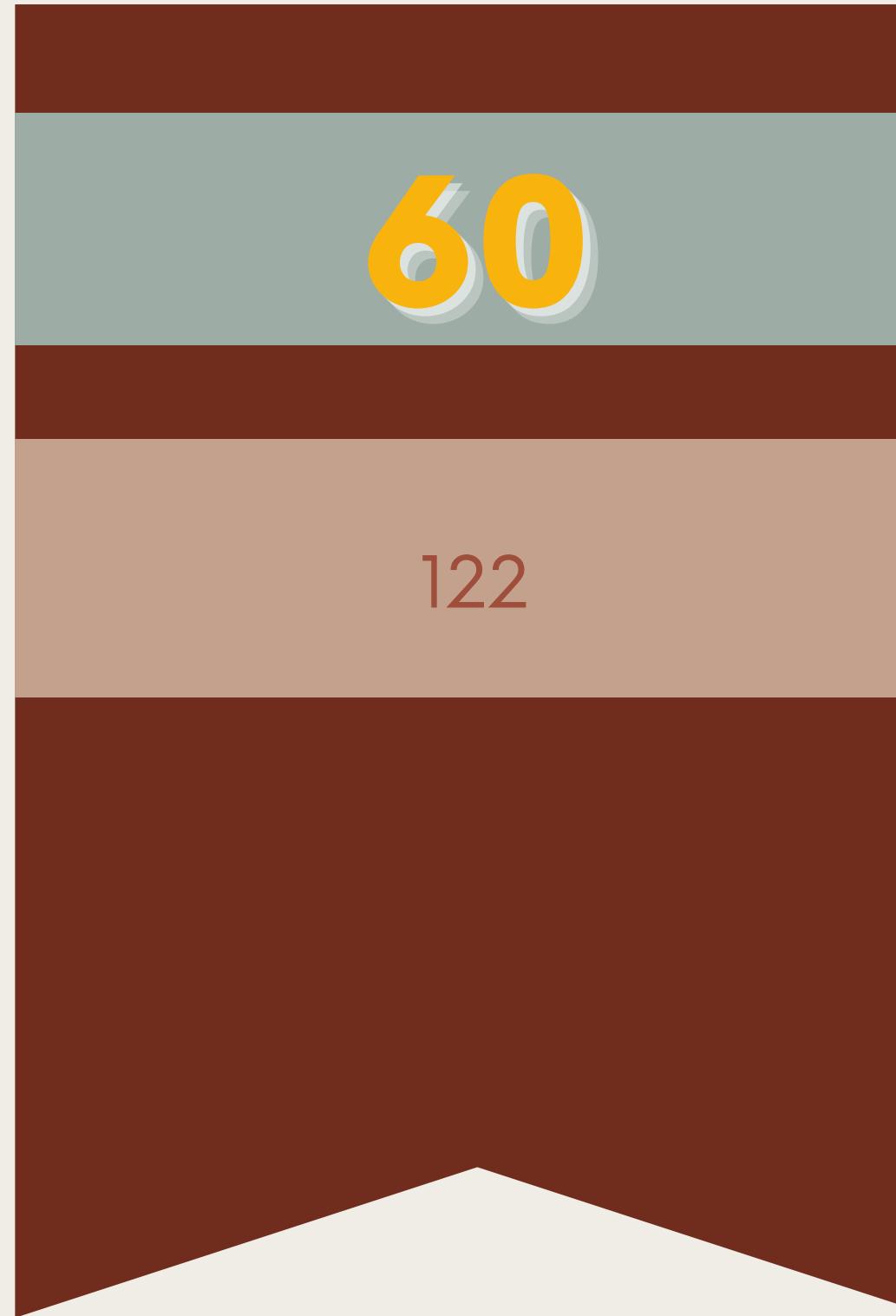
LEGEND

Drawn  
number

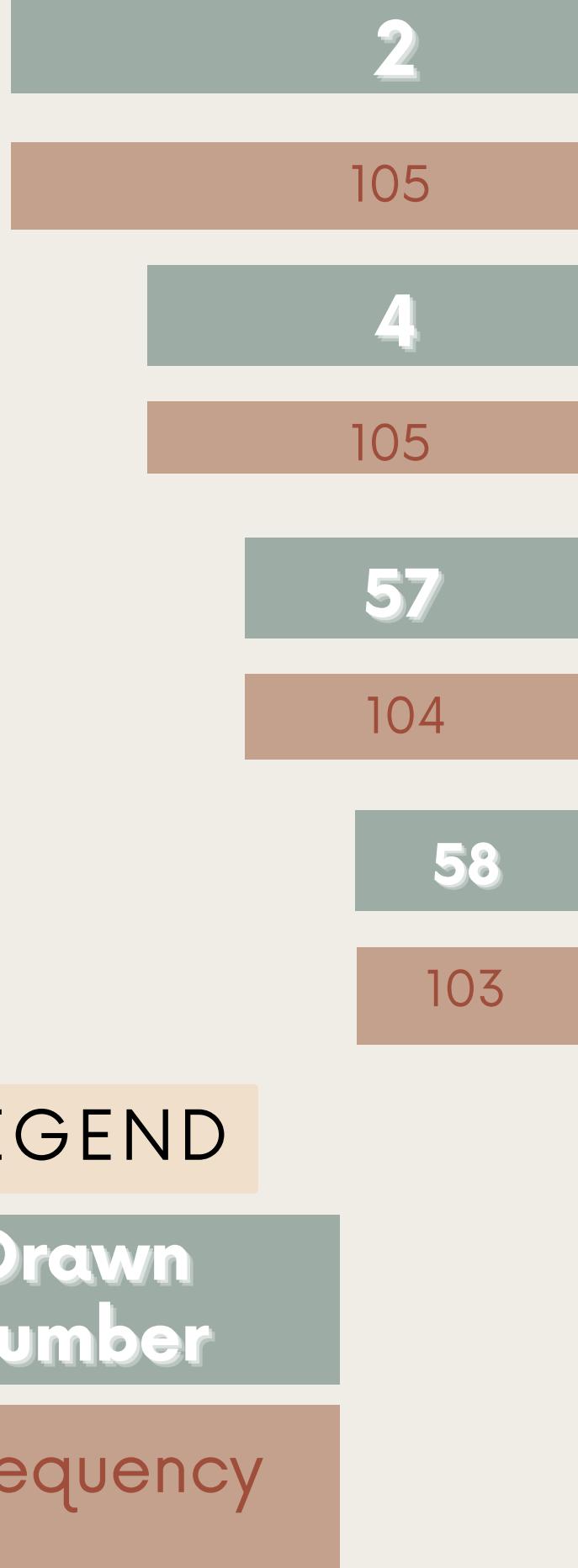
Frequency

## Evaluation question 6

What numbers were played the most out of the 5 numbers?



## MOST PLAYED NUMBERS



# Weekend TOP NUMBERS

Evaluation question 7 & 8

What 6 numbers were played the most including CB  
on Saturday and Sunday?

Pick 1

1

Pick 3

31

Pick 2

24

Pick 4

45

Pick 5

59

Cash Ball

1

## Evaluation question BONUS

The count for the number that played the most for each pick. This is what it looks like.

## TOP 5

### PLAYED NUMBERS





# More discoveries

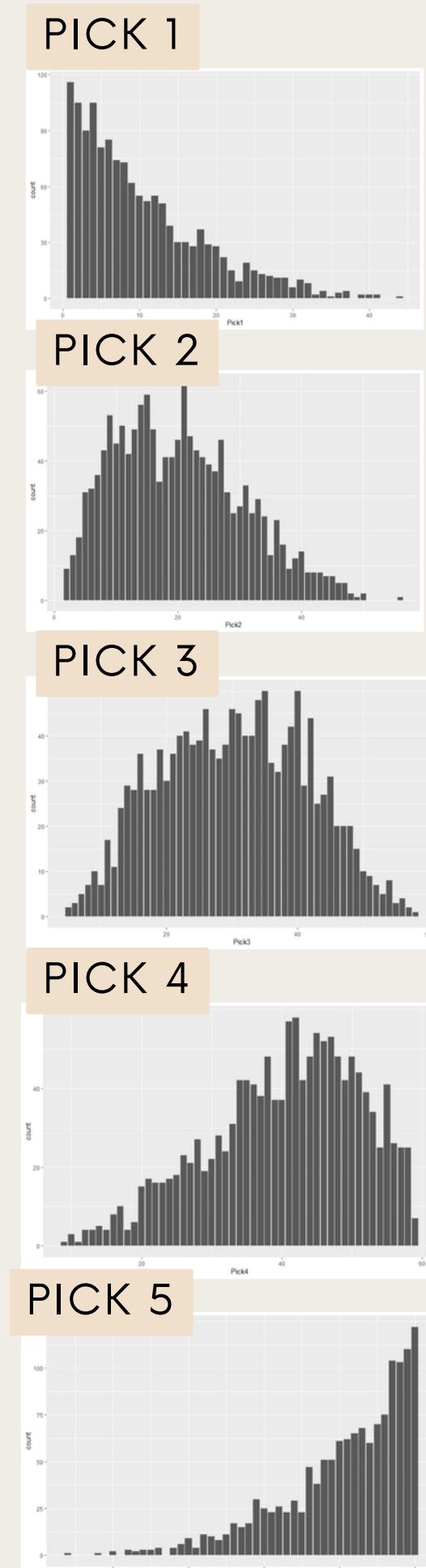
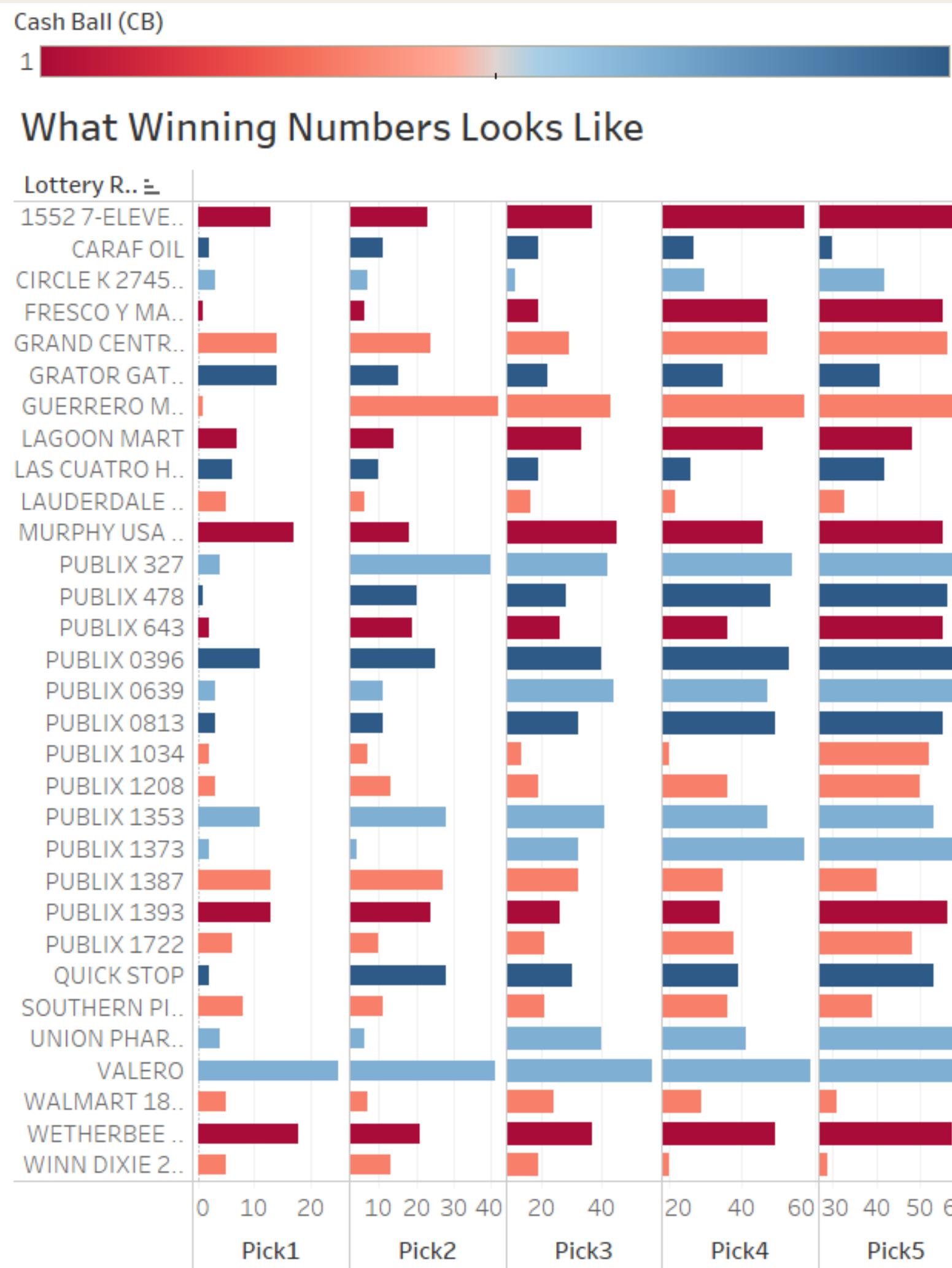
LOOKING AT THE WINNERS

# Winning NUMBERS

- It is a half/ half chance of whether cash ball is either 1 or 2, vs 3 or 4.
- There were many cases where, the higher Pick 1 is, the higher the other numbers were.

## Ascending effect

- We see clearly, even for wins, Pick 1 is typically a lower number. There is almost a transition taking place, where in an ascending order the numbers get larger with each drawn number.
- The graph to the right confirms the FREQUENCY OF DRAWS, that the first draw skews to the left where a high volume of numbers are picked closer to 1 and as it continues to the end at 5th draw it skews to the right, where a high volume of numbers are picked closer to 60.

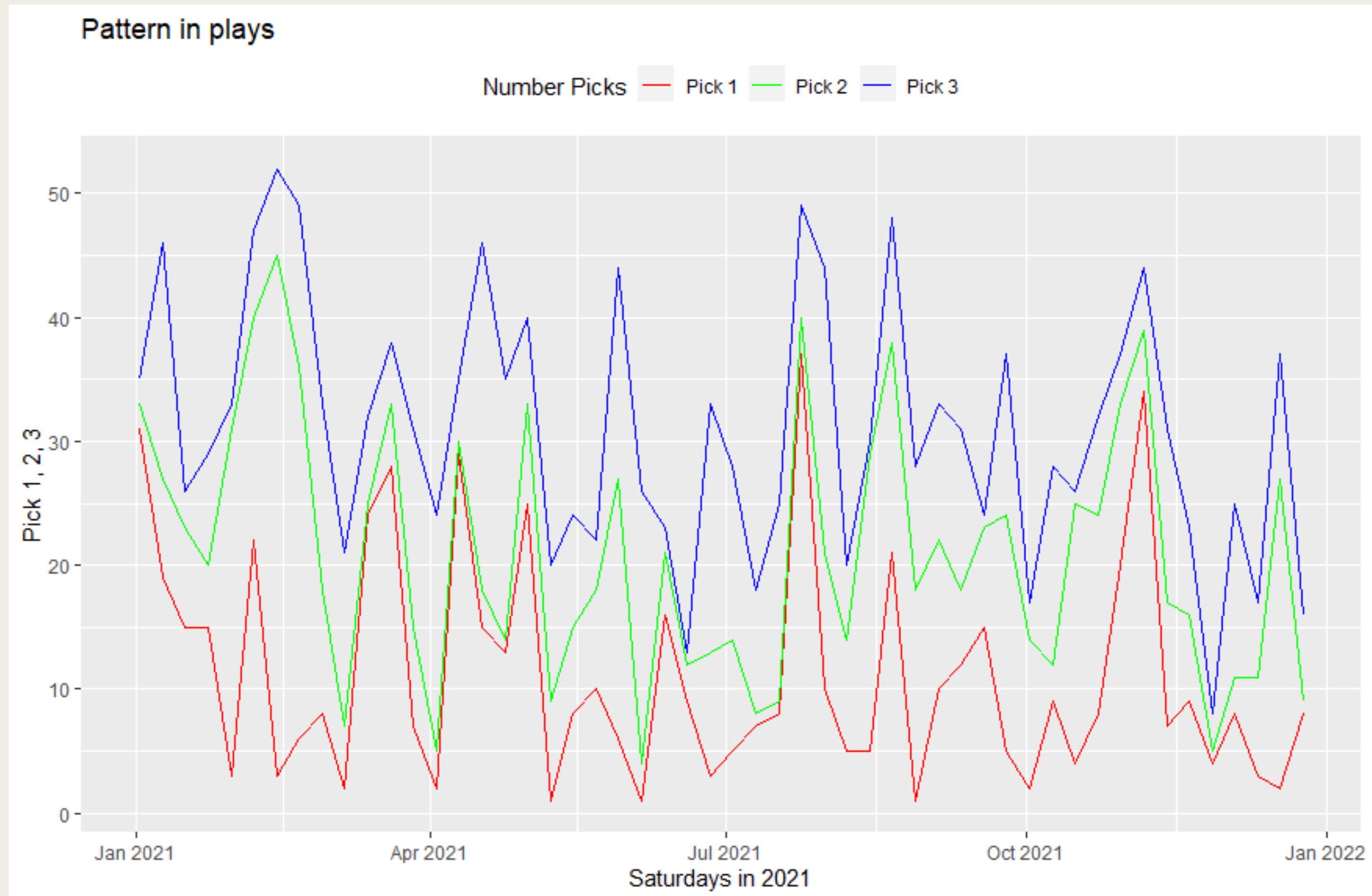


# Patterns for Saturday 2021

# Is there a pattern?

## WHAT IS THE PATTERN?

- Looking for patterns for pick 1, pick 2, pick 3 for Saturday 2021.
- Around February, April, May, August, October, November, when Pick 3 was a higher numbers, Pick 1 and Pick 2 were also high numbers.

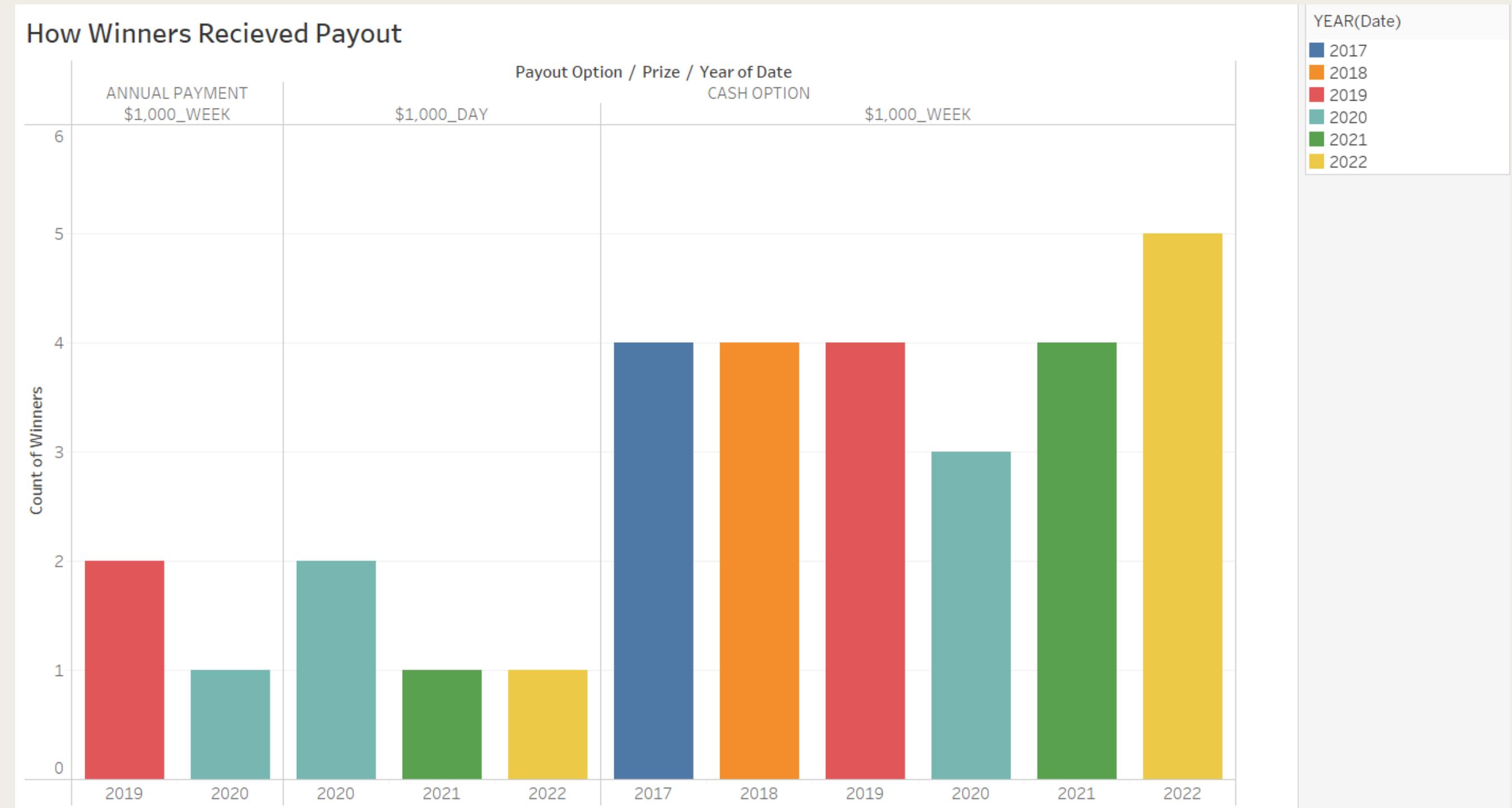


# Payout

## CASH OPTION VS ANNUAL PAYOUT

Cash option: the lump sum  
Annual option: annual payout

- Cash option is the most popular way to receive prizes.
- All \$1000/day winners picked Cash option.
- Most \$1000/week winners picked Cash option

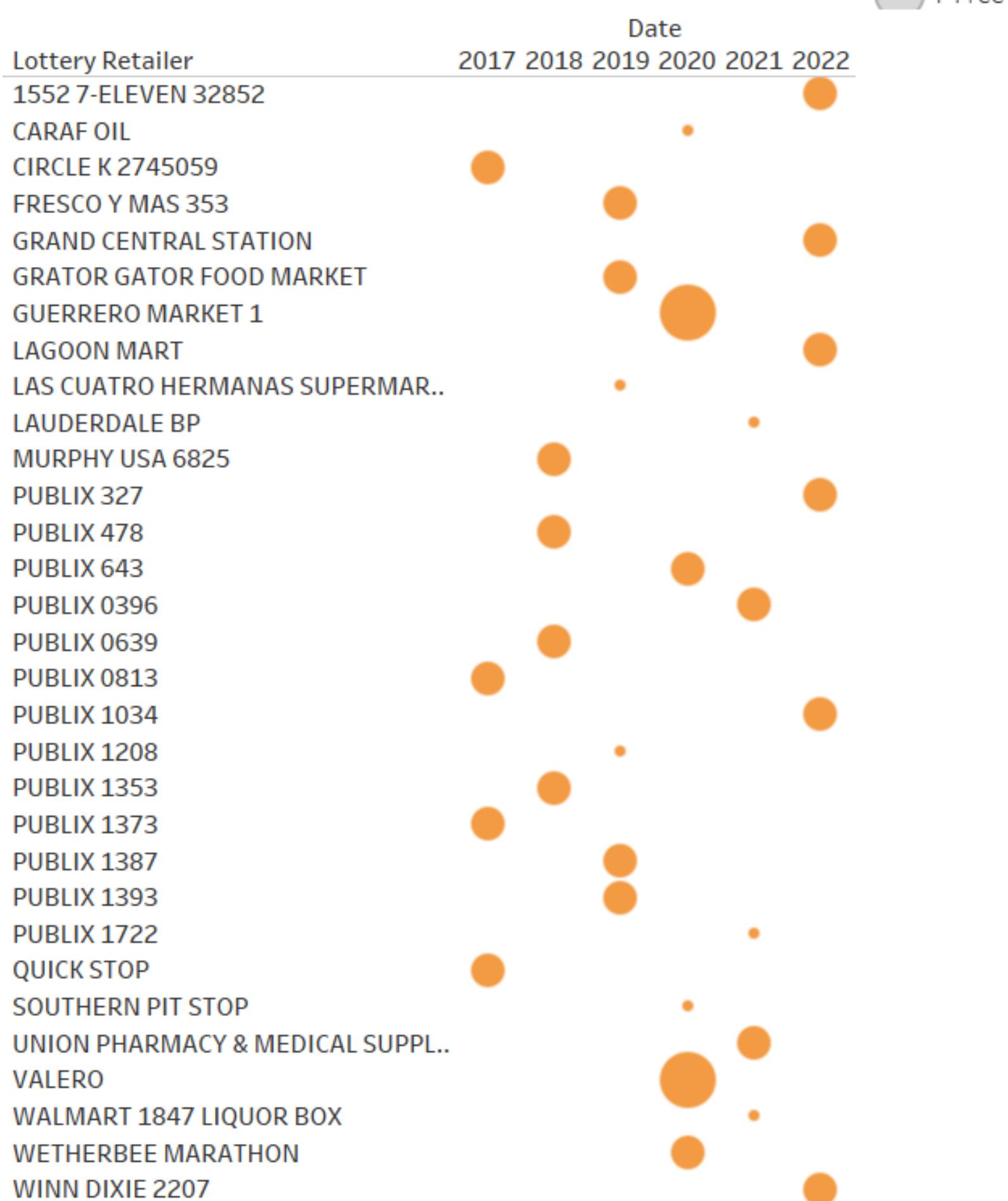


# Quick Pick is the winning way?

LET US SEE

- At a glance "yes " for Quick pick stands out.
- The years 2017, 2018 and 2022 so far being the years with only quick pick winner.
- Publix grocery store is the best place to get a Quick pick with the most wins.

The Retailers that Produced the Most Winning Quick Picks



# The days to buy

## WHEN TO GET YOUR TICKET

- Mondays and Thursdays both high, with third place being Saturdays. These seem to be the days to go out and get a quick pick play.
- If you are not a quick pick player Wednesday is the best day to play.

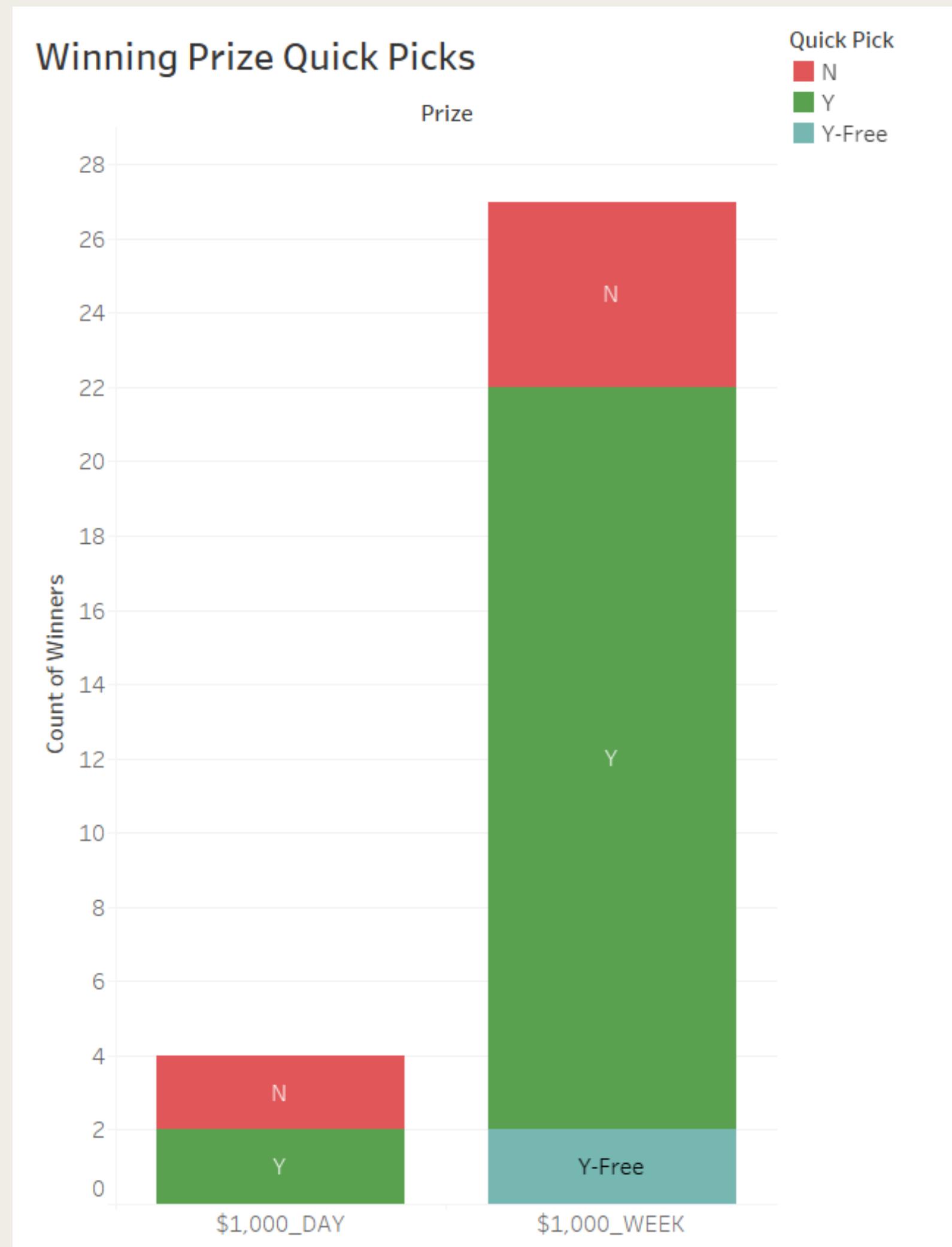
The Best days to Buy a Winning Quick Pick



# Popular prize for quick pick

LET US SEE

- We saw earlier that \$1000/week is won more than the top prize \$1000/day but more Quick pick winners were able to snag the second-place prize.



# Summary

YES

4. Are there 3 and 4 numbers that have played together more than once for each new draw and what are they?

YES

5. What Cash Ball (CB) number is the most popular/played the most?

YES

6. What numbers were played the most out of the 5 numbers?

YES

7. What 5 numbers were played the most on Saturday and Sunday?

YES

8. What 6 numbers were played the most including CB on Saturday and Sunday?

# Conclusion

- I did not think I would find such compelling information and patterns.
- I was able to answer most of my evaluation questions and draw some conclusions.
- There is a pattern and it can be used to make better selection of numbers for the app.
- Yes, the app can be of good use on the market.

# Questions?

THE END

