Lotto_Research

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Let's look at the most common winning sum

```
winning_sum_df <- data.frame(table(lottoExtended$WinningSum))
winning_sum_df <- winning_sum_df[order(-winning_sum_df$Freq),]
head(winning_sum_df)
```

```
##    Var1 Freq
## 15   14 1167
## 14   13 1145
## 13   12 1126
## 16   15 1103
## 17   16 1073
## 12   11 1045
```

```
summary(winning_sum_df$Freq)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    12.0   168.8   503.0   555.4   982.2  1167.0
```

I want to improve the probability of winning, so I will look at the top winning sum

```
winning_sum_df <- winning_sum_df[1:2,]
# filter based on list in Var1/WiningSum
high_prob_lotto <- lottoExtended[lottoExtended$WinningSum %in% winning_sum_df$Var1,]
```

Lets take a look at what sequence of numbers appear frequently for the top 5

```
most_frequent_by_sum <- high_prob_lotto[high_prob_lotto$WinningSum == 14,]
sort(table(most_frequent_by_sum$Winning), decreasing = T)
```

```
##
## 572 239  68  86 392 527 680 707 167 671 536 158 473 554 266 716 806 518
##  25  24  23  23  23  23  23  23  22  22  21  20  20  20  19  19  19  18
## 932 509 590 617 644 743 761 770 149 275 374 428 464 545 662 734 815 824
##  18  17  17  17  17  17  17  17  16  16  16  16  16  16  16  16  16  16
## 860 950 329 437 482 752 842 851 923  59  77 293 338 563 581 653 194 257
##  16  16  15  15  15  15  15  15  15  14  14  14  14  14  14  14  13  13
## 356 626 914 176 248 284 365 383 455 491 608 635 941 347 833  95 185 446
##  13  13  13  12  12  11  11  11  11  11  11  11  11  10  10   9   9   9
## 725 905 419
##   9   9   6
```

Interesting to see index numbers 1,6 being a sequence made up of the numbers 5, 2, & 7 with a total winning count of 48. While index numberss 3, 4, & 7 being made up of the numbers 0, 6, & 8 with a total winning count of 69. It appears if one wants to have a high probability of winning, they should buy a ticket in Box playstyle with the numbers 0, 6, & 8

I will later dive into other aspects on how to predict winning numbers