

To Change file, we need to normalize balls 57-75 since they have not existed as long as the rest. We need to find how many drawings were done before these new numbers were added, which was October 22, 2013. This can be done in the code to just add a simple counter like:

```
if current_drawing_date < introduction_date:  
    counter += 1
```

```
total_draws += 1
```

The current probabilities are skewed because it has frequencies from when the data was first created, but only considers the drawing number over the past year.

We should create a new dictionary containing the cumulative drawing #s & that way we can subtract the counter above for the other numbers to get their non-skewed averages.

```
for number in number_freq:
```

```
    if (number >= 52):
```

```
        number_prob[number] = freq / (total_draws - draws_before_intro)  
    else:
```

```
        number_prob[number] = freq / total_draws
```

If we want to stick to only considering draws over the past year, we should consider frequencies over the past year & NOT look at all the historical data, we can change the code to only consider drawings in the past year.

if $1 \leq \text{Number} \leq \text{Max Number}$ and $\text{date} \geq \text{intro_date}$:

$$\text{Number_frequency}[\text{number}] = \text{number_frequency.get}(\text{number}, 0) + 1$$

We will also add an input asking which one of these strategies to pick