# Notation

April 15, 2019

0.0.1 Notation Notebook

Use the information in this notebook to assist with answering the following quiz questions below the notebook. Let's begin by creating a **population dataset** stored in **pop_data** and importing some libraries.

```
In [5]: import numpy as np
        import matplotlib.pyplot as plt
        import pandas as pd

        %matplotlib inline
        np.random.seed(42)

        pop_data = np.random.gamma(1,100, 3000)
        plt.hist(pop_data);
```
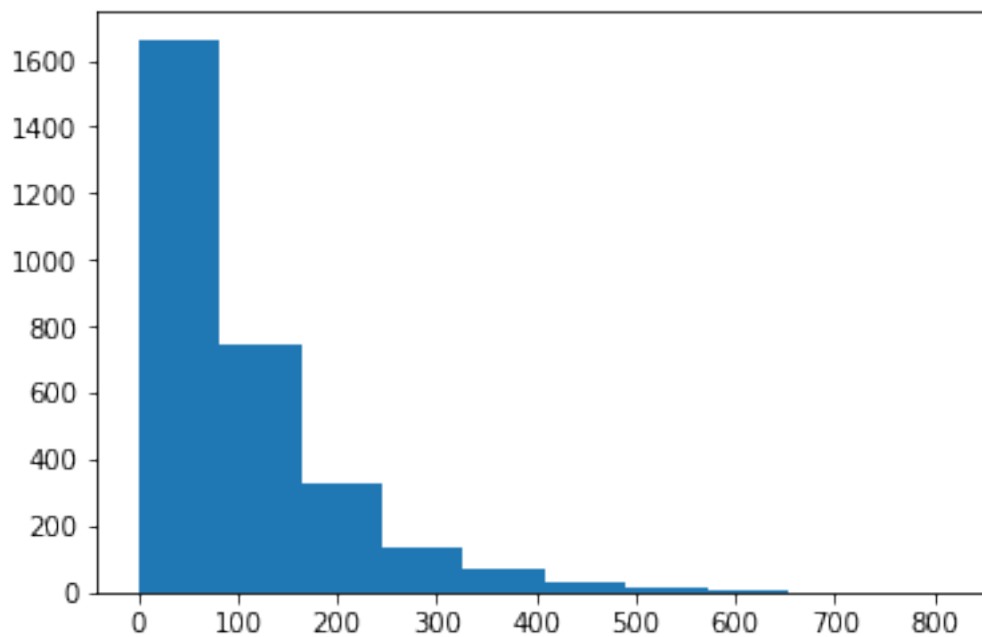

1. What is the population mean?

```
In [2]: pop_data.mean()

Out[2]: 100.35978700795846
```

2. Randomly select 10 draws from the population using **numpy's random.choice**. What is the sample mean for these 10 values?

```
In [17]: draws_10 = np.random.choice(pop_data,size= 10)
         draws_10
         draws_10.mean()

Out[17]: 104.46735972625535
```

3. What is the sample standard deviation of your 10 draws?

```
In [18]: draws_10.std()

Out[18]: 128.12742178738628
```

4. What is the population standard deviation?

```
In [19]: pop_data.std()

Out[19]: 99.778601879689063
```

5. What is the population variance?

```
In [20]: pop_data.var()

Out[20]: 9955.7693930654896
```

6. What is the sample variance?

```
In [21]: draws.var()

Out[21]: 4106.2778113831391

In [ ]:
```