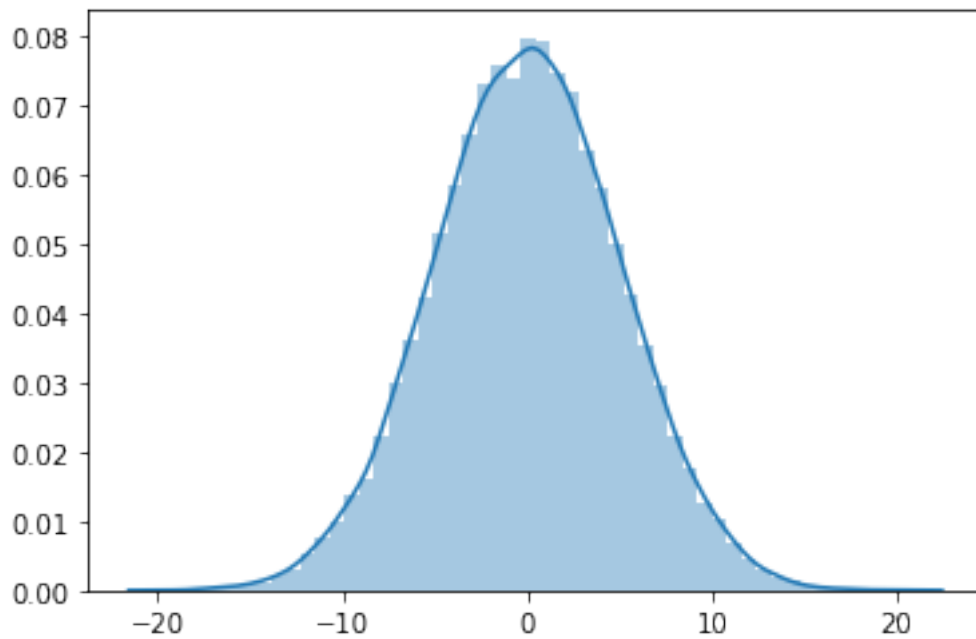# Problem3

February 4, 2020

```python
[2]: import numpy as np
     import matplotlib.pyplot as plt
     import seaborn as sns
```

```python
[4]: mu, sigma = 0, 5
     s = np.random.normal(mu, sigma, 25000)
     sns.distplot(s)
```

```
[4]: <matplotlib.axes._subplots.AxesSubplot at 0x1a19b4bfd0>
```



```python
[5]: mean = np.sum(s)/len(s)
     print(mean)
```

```
-0.000562170309396754
```

```python
[6]: np.mean(s)
```

[6]: `-0.000562170309396754`

Computing the mean in both numpy shortcuts and simple numpy commands we get the same mean.

```python
[7]: numerator = 0
for num in s:
    numerator += np.square(num - mu)

std = np.sqrt(numerator/25000)
print(std)
```

`5.028420169513063`

```python
[8]: np.std(s)
```

[8]: `5.028420138088134`

Computing the mean in both numpy shortcuts and simple numpy commands we get the same std.