

# Law of Large Numbers

Pinak Nayak

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#### Law of Large Numbers ####
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```
# E(x) should tend to 68.2 as sample size gets larger
```

```
# Small Sample ----
```

```
SmallN <- 50 #Sample Size
```

```
smalllawnumber <- 0
```

```
for(i in rnorm(SmallN)){if(i<=1 & i>=-1){smalllawnumber <- smalllawnumber +1}}
```

```
SmallLaw <- smalllawnumber/SmallN
```

```
print(SmallLaw)
```

```
## [1] 0.58
```

```
# Medium Sample Size ----
```

```
MediumN <- 500 #Sample Size
```

```
Mediumlawnumber <- 0
```

```
for(i in rnorm(MediumN)){if(i<=1 & i>=-1){Mediumlawnumber <- Mediumlawnumber +1}}
```

```
MediumLaw <- Mediumlawnumber/MediumN
```

```
print(MediumLaw)
```

```
## [1] 0.686
```

```
# Large Sample Size ----
```

```
LargeN <- 50000 #Sample Size
```

```
Largelawnumber <- 0
```

```
for(i in rnorm(LargeN)){if(i<=1 & i>=-1){Largelawnumber <- Largelawnumber +1}}  
  
LargeLaw <- Largelawnumber/LargeN  
print(LargeLaw)
```

```
## [1] 0.68088
```