

# BACS HW2

Bijon Setyawan Raya 109062710

3/14/2021

## Question 1

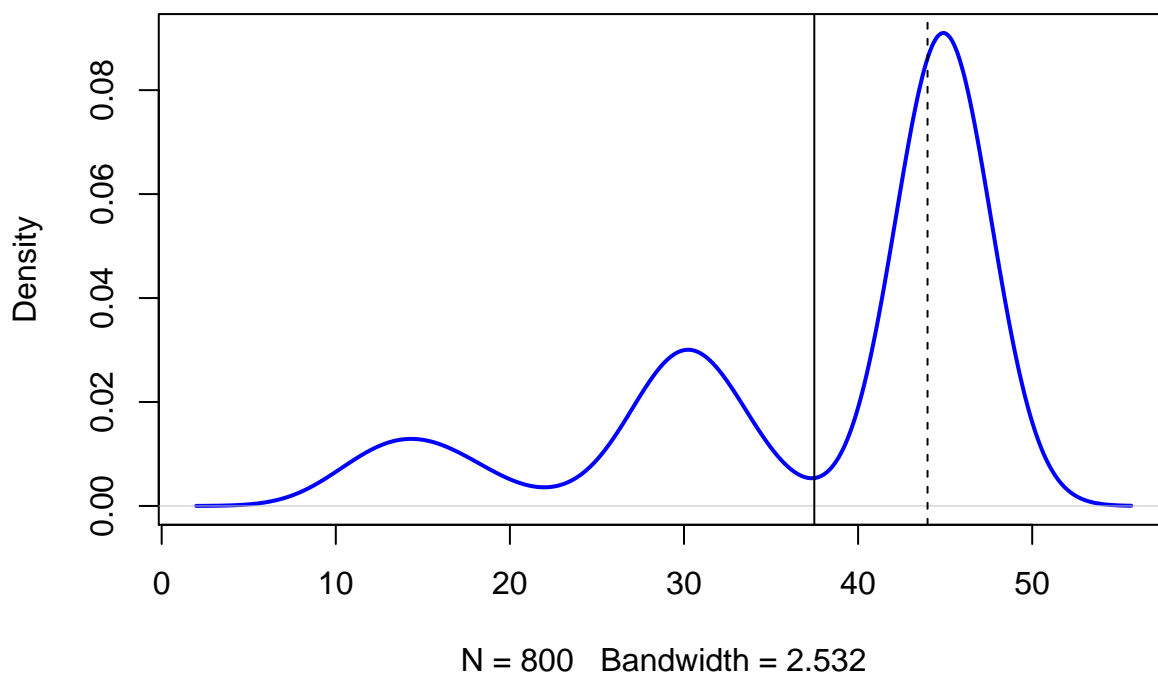
(a) A graph with negatively skewed tail

```
d1 <- rnorm(n=500, mean=45, sd=1)
d2 <- rnorm(n=200, mean=30, sd=2)
d3 <- rnorm(n=100, mean=15, sd=3)

dataset <- c(d1, d2, d3)
plot(density(dataset), col="blue", lwd=2, main="Distribution 2")

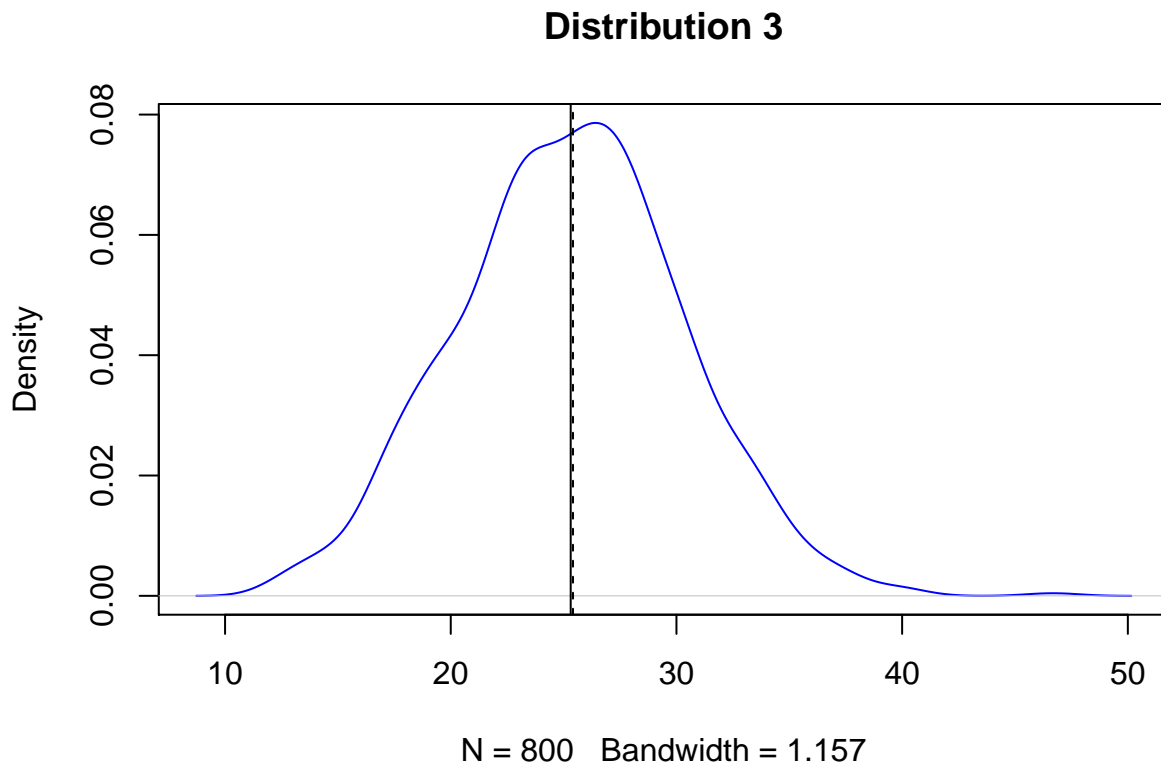
abline(v=mean(dataset))
abline(v=median(dataset), lty="dashed")
```

### Distribution 2



(b) A graph with bell shaped curve

```
dataset <- c(rnorm(n=800, mean=25, sd=5))  
  
plot(density(dataset), col="blue", main="Distribution 3")  
  
abline(v=mean(dataset))  
abline(v=median(dataset), lty="dashed")
```



(c) Which of the central measurements is more likely to be affected by outliers in the data? Is it Mean or Median?

Mean will more likely to be affected by outliers in the data. Mean will increase because of the existence of higher outliers. Conversely, Mean will decrease because of the existence of lower outliers.

## Question 2

```
rdata <- rnorm(n=2000, mean=0, sd=1)  
  
dataset <- c(rdata)  
  
plot(density(rdata), col="blue", main="Random Data")
```

```

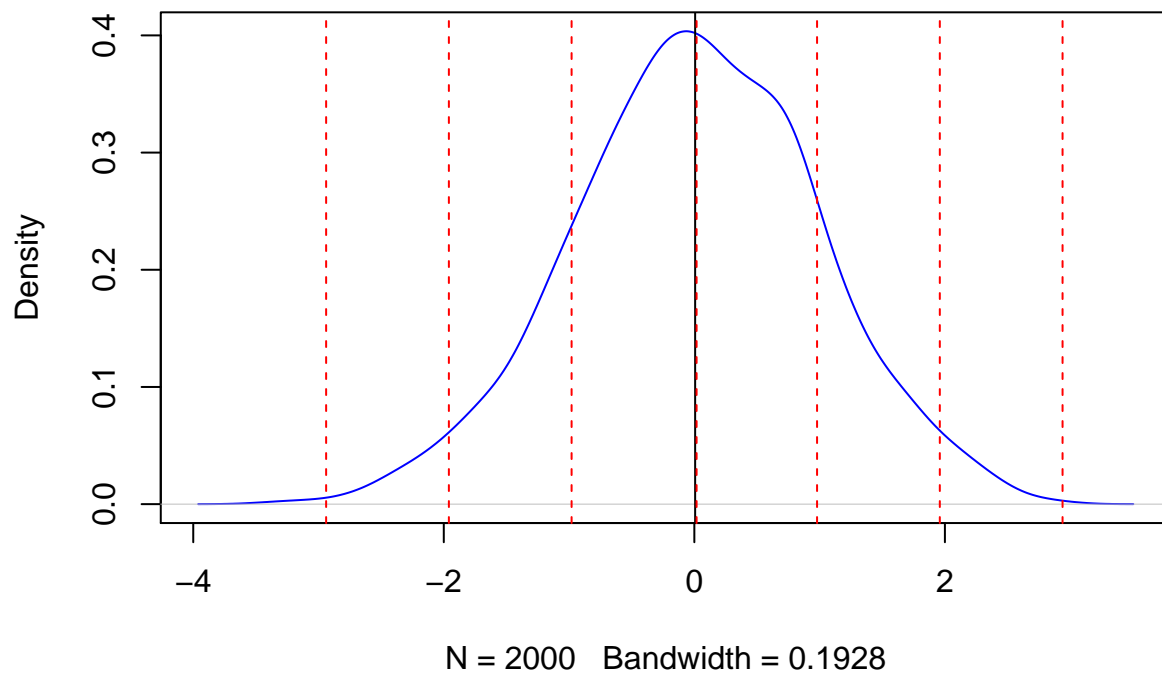
abline(v=mean(dataset))
abline(v=median(dataset), col="red", lty="dashed")

# negative STDs
abline(v=sd(dataset) * -1, col="red", lty="dashed")
abline(v=sd(dataset) * -2, col="red", lty="dashed")
abline(v=sd(dataset) * -3, col="red", lty="dashed")

# positive STDs
abline(v=sd(dataset), col="red", lty="dashed")
abline(v=sd(dataset) * 2, col="red", lty="dashed")
abline(v=sd(dataset) * 3, col="red", lty="dashed")

```

## Random Data



## Question 3