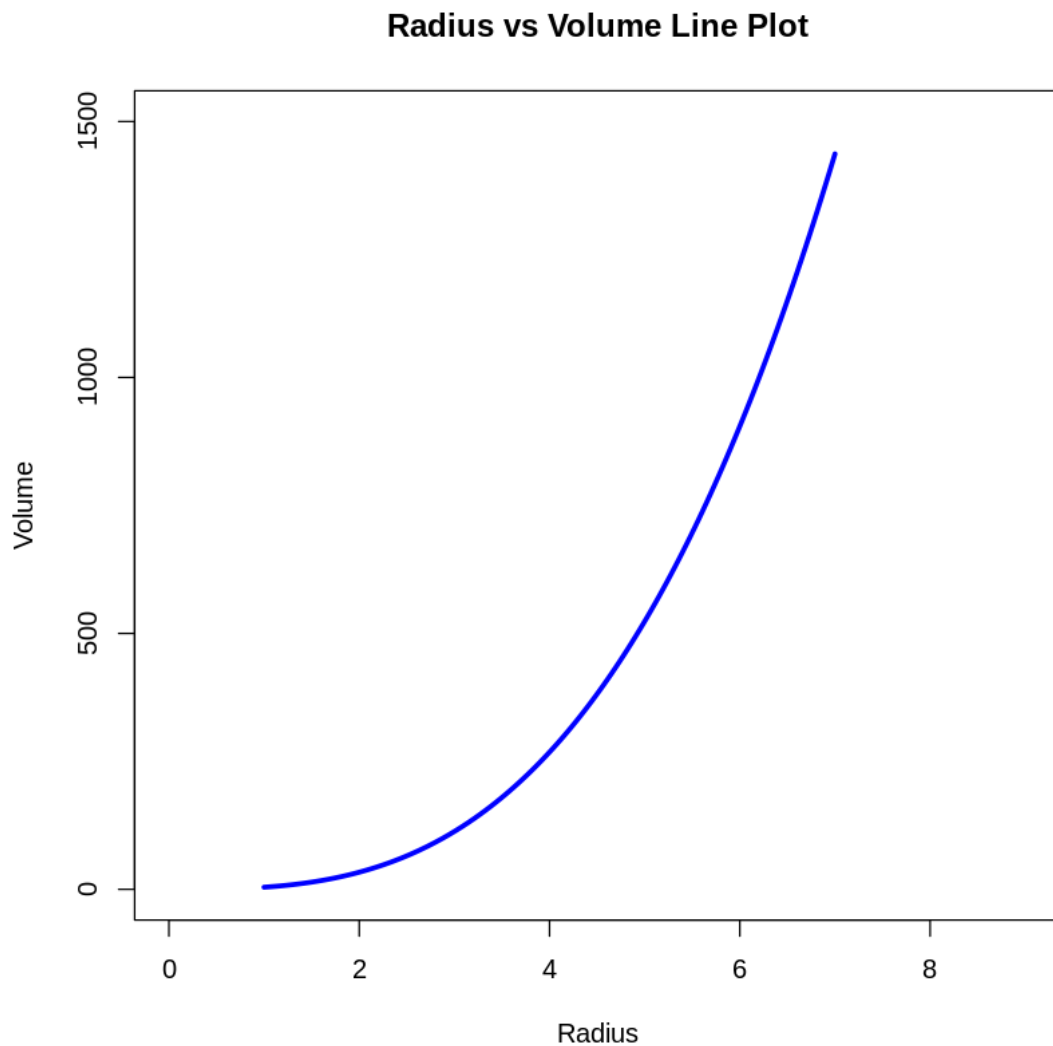# Problem 2

## January 19, 2021

Questions 2a and 2b (scroll down to see the plot)

```
[1]: par(mfrow=c(1,1))
     radius = seq(from = 1,to = 7,length = 10000)
     volume = 4/3*pi*radius^3
     plot(radius,volume,main="Radius vs Volume Line Plot",
          xlab="Radius", ylab="Volume", col = 'blue',
          lwd = 3, type = 'l', ylim=c(0,1500),xlim=c(0,9))
```

**Radius vs Volume Line Plot**



Questions 2c

graph using ggplot2

```
[2]: library(tidyverse)
     df = data.frame(radius,volume)
     ggplot(df, aes(x=radius,y=volume))+geom_line()+
         ggtitle("Radius vs Volume Line Plot")+
         theme(plot.title = element_text(size=15,hjust = 0.5))
```

**Attaching packages**                                   tidyverse
1.3.0

    ggplot2 3.2.1         purrr     0.3.3

```
tibble   2.1.3        dplyr    0.8.4
tidyr    1.0.2        stringr  1.4.0
readr    1.3.1        forcats  0.4.0

 Conflicts
tidyverse_conflicts()
 dplyr::filter() masks stats::filter()
 dplyr::lag()    masks stats::lag()
```

## Radius vs Volume Line Plot