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title: "Bootstrapping Assignment in R"
author: "Katie, Rita, and Chang"
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output: html_document
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```{r setup, include=FALSE}
library(knitr)
knitr::opts_chunk$set(echo = TRUE)
#if(!require("boot")) install.packages("boot", dep=TRUE)
```

# Part 1
# upload necessary packages
```{r}
library("boot")
```

# set up problem
```{r}
set.seed(123)
theta = 12 # parameter for the uniform
dat <- (c(runif(100)*theta))
```

# define function using minimum and maximum
```{r}
fc_minandmax <- function(d, i){
  d3 <- d[i]
  return(min(d3) + max(d3))
}
```

# perform bootstrap
```{r}
set.seed(321)
b.minandmax = boot(dat, fc_minandmax, R = 100)
b.minandmax
plot(b.minandmax)
```

# Part 2
```{r}
set.seed(123)
theta = 8 # parameter for the uniform
dat = c(rexp(100)*theta)
```

# define function using x bar (mean)
```{r}
fc_mean <- function(d, i) {
  d2 <- d[i]
  return(mean(d2))
}
```

# perform bootstrap
```{r}
set.seed(321)
b.mean = boot(dat, fc_mean, R = 100)
b.mean
plot(b.mean)
```
````

define function using median
```{r}
fc_med <- function(d, i){
  d2 <- d[i]
  return(median(d2))
}
```

perform bootstrap
```{r}
set.seed(321)
b.med = boot(dat, fc_med, R = 100)
b.med
plot(b.med)
```