

DATA 604 Hmwk 7

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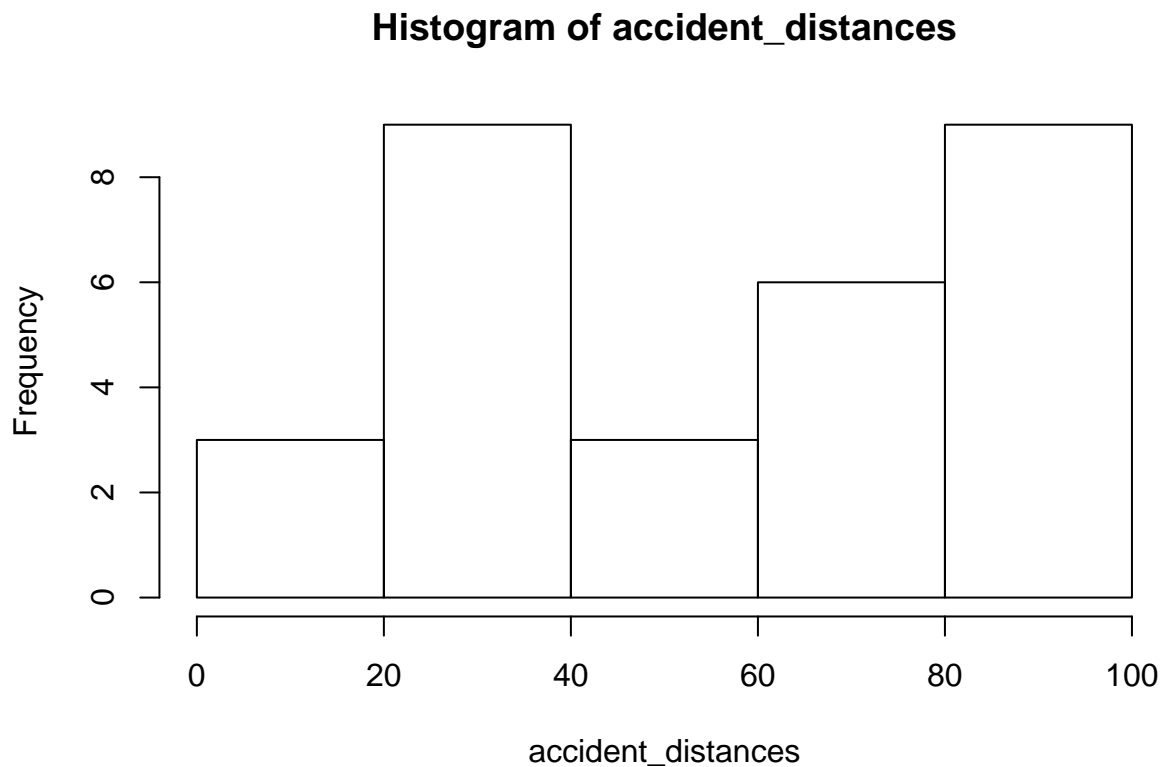
DES Textbook Problems:

9.14

```
accident_distances <- c(88.3, 40.7, 36.3, 27.3, 36.8, 91.7, 67.3, 7.0, 45.2, 23.3, 98.8, 90.1, 17.2, 23.3)
length(accident_distances)
```

```
## [1] 30
```

```
hist(accident_distances)
```



```
ks.test(accident_distances, runif(length(accident_distances)), min=min(accident_distances), max=max(accident_distances))
```

##

```
## Two-sample Kolmogorov-Smirnov test
```

##

```
## data:  accident_distances and runif(length(accident_distances))
```

```
## D = 1, p-value = 1.872e-13
```

```
## alternative hypothesis: two-sided
```

9.17

```
empl_mins <- c(1.88,0.54,1.9,0.15,0.02,2.81,1.5,0.53,2.62,2.67,3.53,0.53,1.8,0.79,0.21,0.8,0.26,0.63,0.1)

length(empl_mins)

## [1] 50

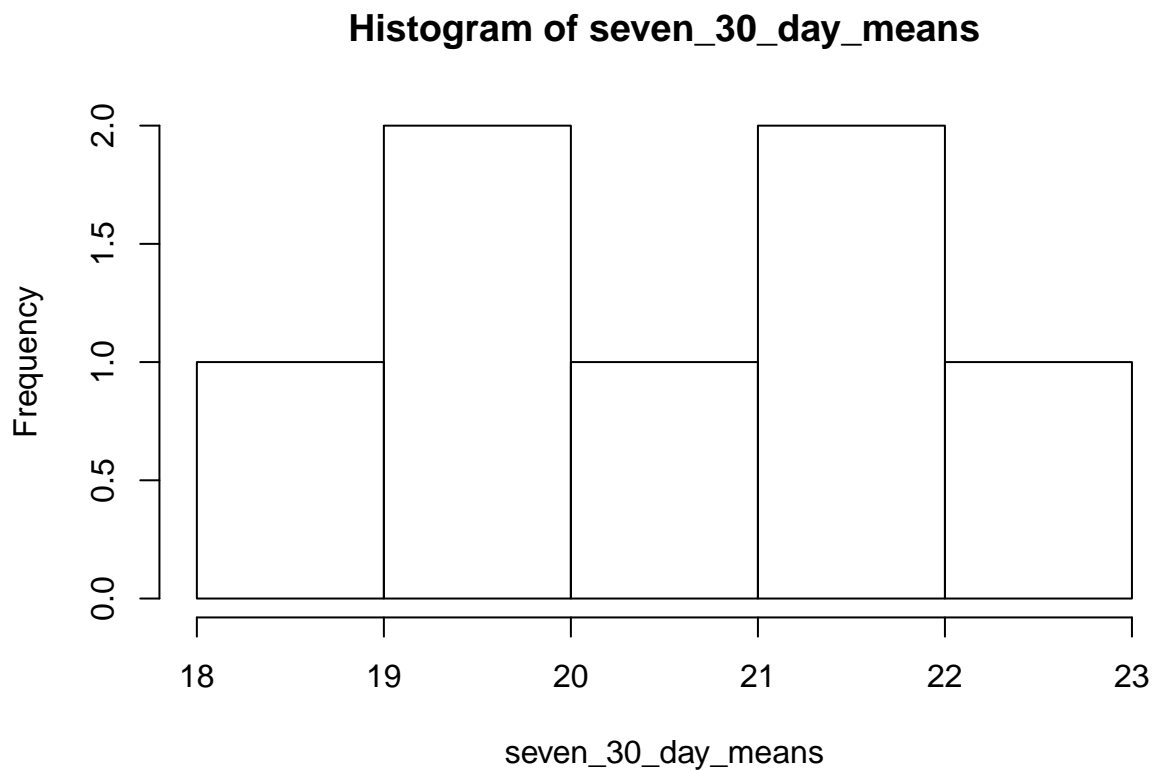
library(MASS)

chisq.test(empl_mins)

##
## Chi-squared test for given probabilities
##
## data:  empl_mins
## X-squared = 65.235, df = 49, p-value = 0.0602
```

10.1

```
mean_num_jobs_in_shop_on_a_day <- 22.5
seven_30_day_means <- c(18.9,22.0,19.4,22.1,19.8,21.9,20.2)
hist(seven_30_day_means)
```



```
t.test(seven_30_day_means, mu = mean(mean_num_jobs_in_shop_on_a_day))
```

```
##  
## One Sample t-test  
##  
## data: seven_30_day_means  
## t = -3.6799, df = 6, p-value = 0.01033  
## alternative hypothesis: true mean is not equal to 22.5  
## 95 percent confidence interval:  
## 19.36041 21.86816  
## sample estimates:  
## mean of x  
## 20.61429
```

It does not seem likely that this was due to chance.

11.13 (Use Simio to build the simulation model)