Z-Scores.R
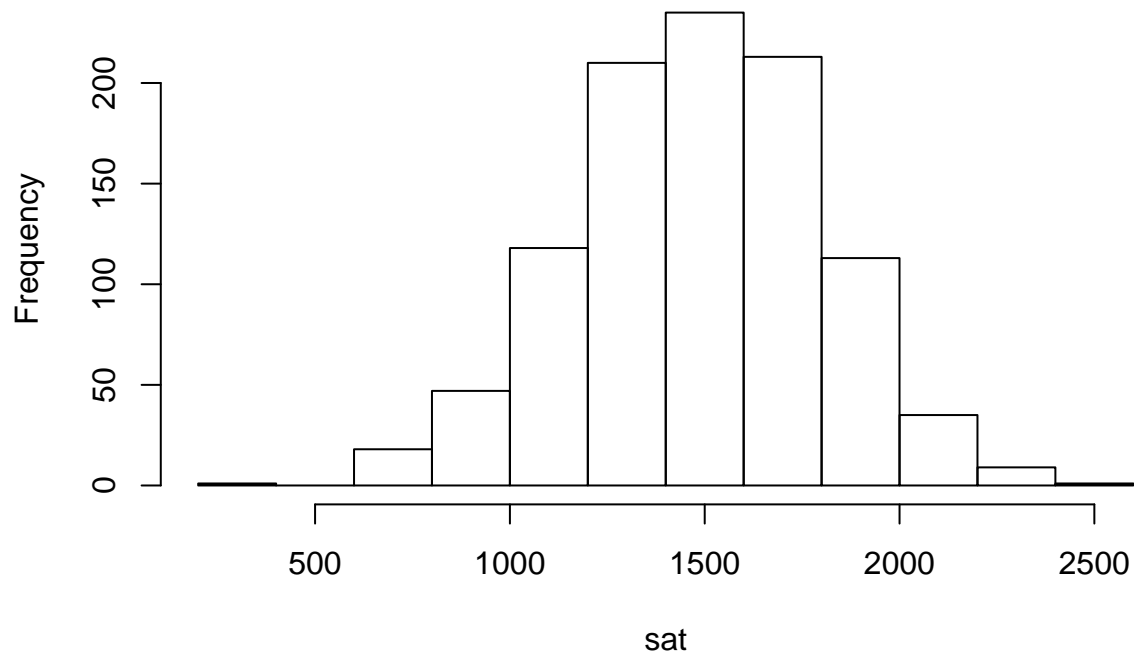
jbryer

Wed Sep 16 20:16:46 2015
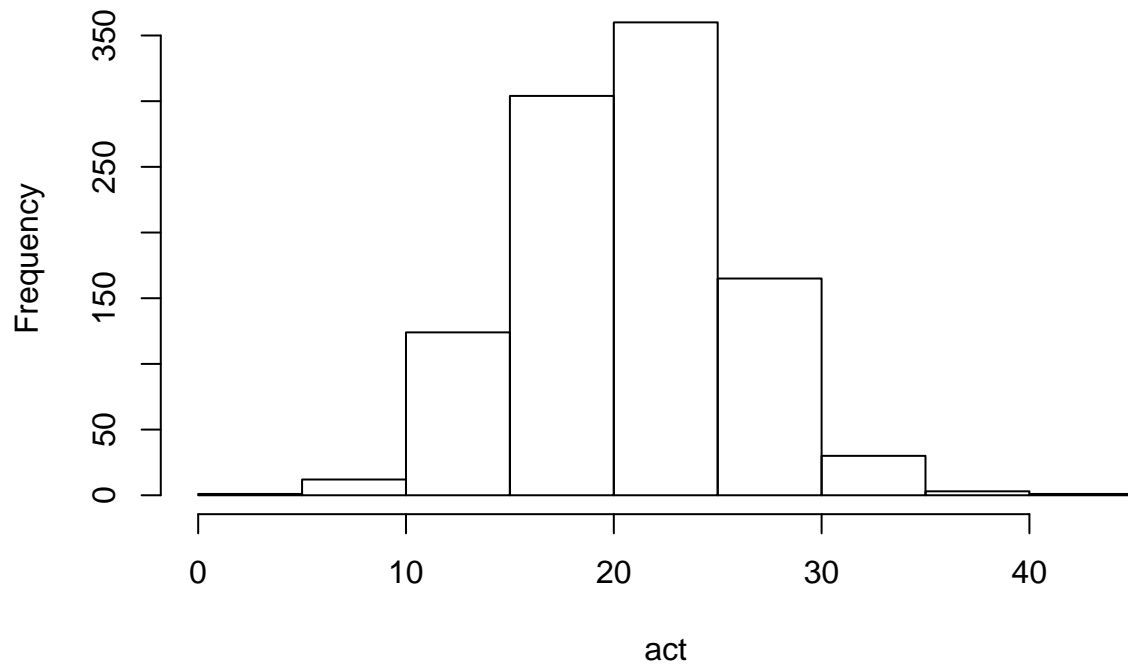
```r
sat <- rnorm(1000, mean=1500, sd=300)
hist(sat)
```

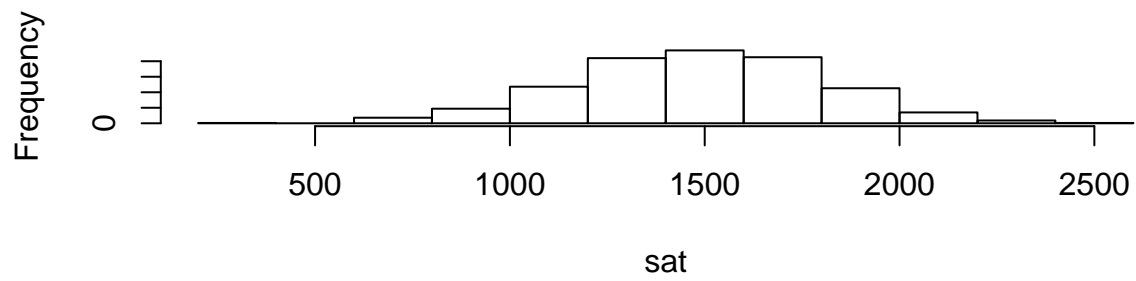**Histogram of sat**


```r
act <- rnorm(1000, mean=21, sd=5)
hist(act)
```

Histogram of act


```
par.orig <- par(mfrow=c(2,1))
hist(sat); hist(act)
```
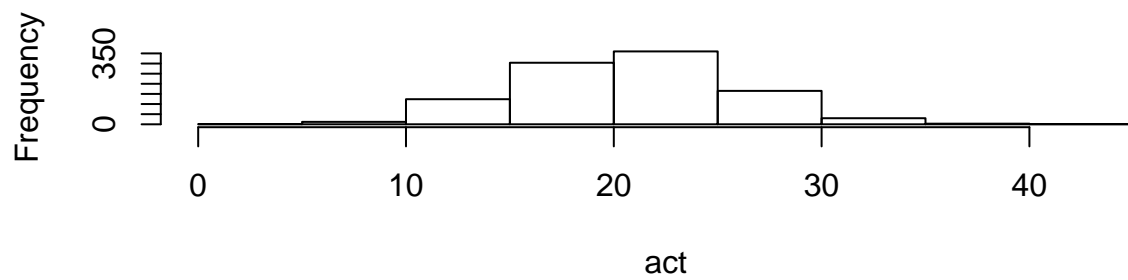
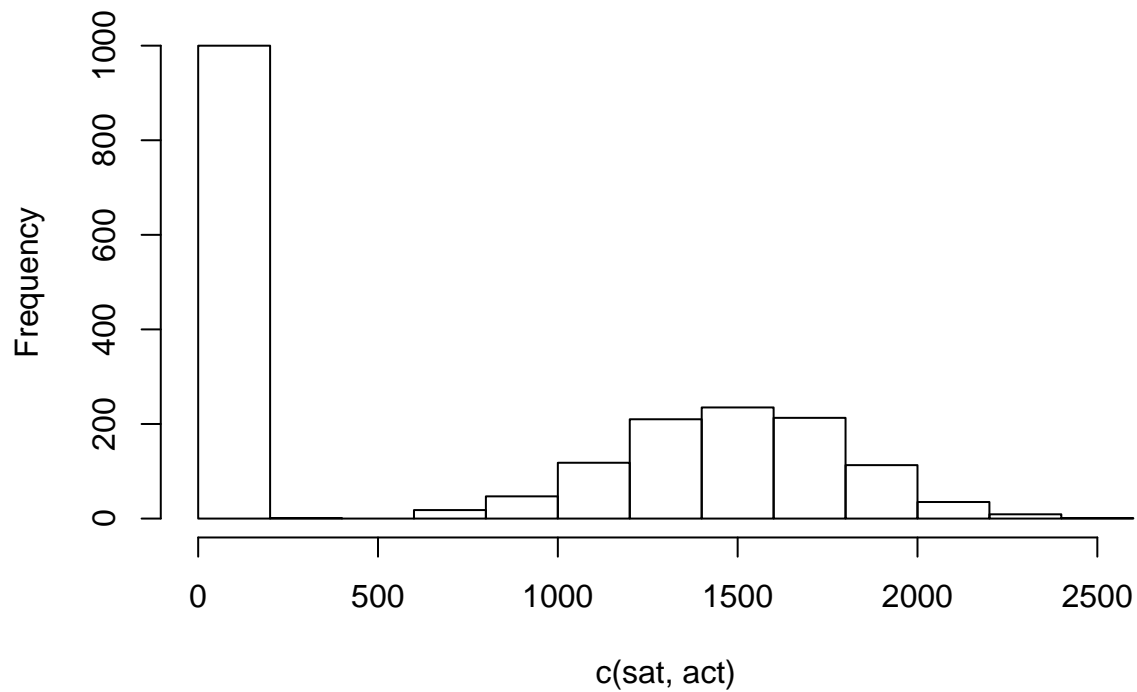## Histogram of sat

Histogram of act

```r
par(par.orig)

hist(c(sat, act))
```

Histogram of c(sat, act)


```r
act.z <- (act - mean(act)) / sd(act)
sat.z <- (sat - mean(sat)) / sd(sat)

mean(act.z); sd(act.z)
```
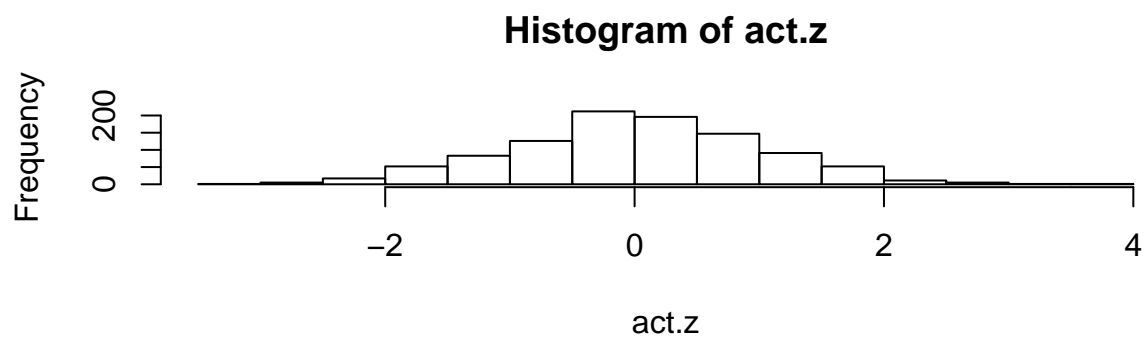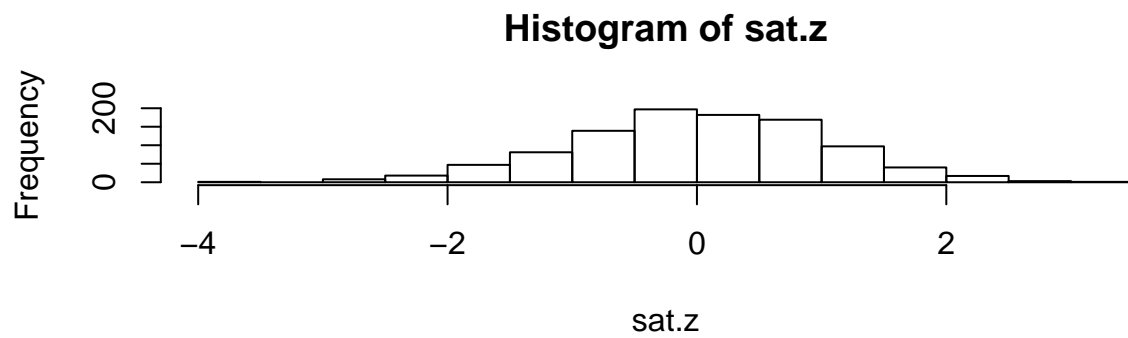
```
## [1] -2.1857e-16
```

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

```r
mean(sat.z); sd(sat.z)
```

```
## [1] -4.135407e-17
```

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

```r
par.orig <- par(mfrow=c(2,1))
hist(sat.z); hist(act.z)
```

Histogram of sat.z
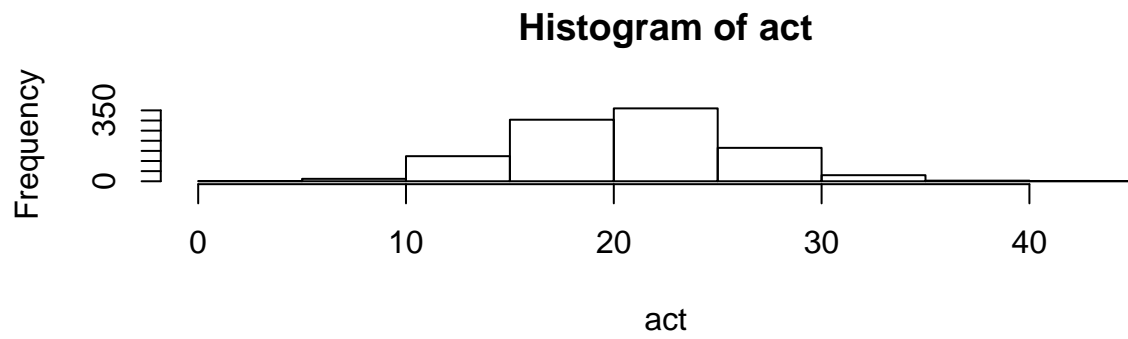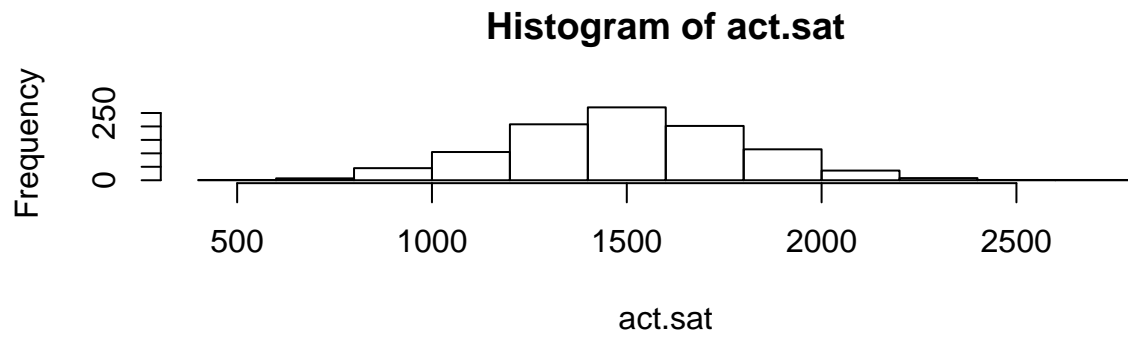

Histogram of act.z


```r
par(par.orig)

# z = (i - mean) / sd
# z * sd = i - mean
# z * sd + mean = i

act.sat <- act.z * 300 + 1500

par.orig <- par(mfrow=c(2,1))
hist(act.sat); hist(act)
```

Histogram of act.sat

Frequency

250

0

500   1000   1500   2000   2500

act.sat

Histogram of act

Frequency

350

0

0   10   20   30   40

act

```
par(par.orig)
```