D2

Jeremiah Theisen

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3.2.1

a. 6m
b. 2 sd above
c. 3m below
d. 1 sd below
e. 5m above
f. $8/3 = 1\ 2/3 = 1.6666666$ sd

3.2.2 SKIP

3.2.3 SKIP

3.2.4

a.

```
pnorm(130, mean=120, sd=25)
```

```
## [1] 0.6554217
```

b. 0.3445783
c.

```
pnorm(100, mean=120, sd=25)
```

```
## [1] 0.2118554
```

d. 0.4435663
e.

```
qnorm(0.1, mean=120, sd=25)
```

```
## [1] 87.96121
```

f.

```r
qnorm(0.95, mean=120, sd=25)
```

```
## [1] 161.1213
```

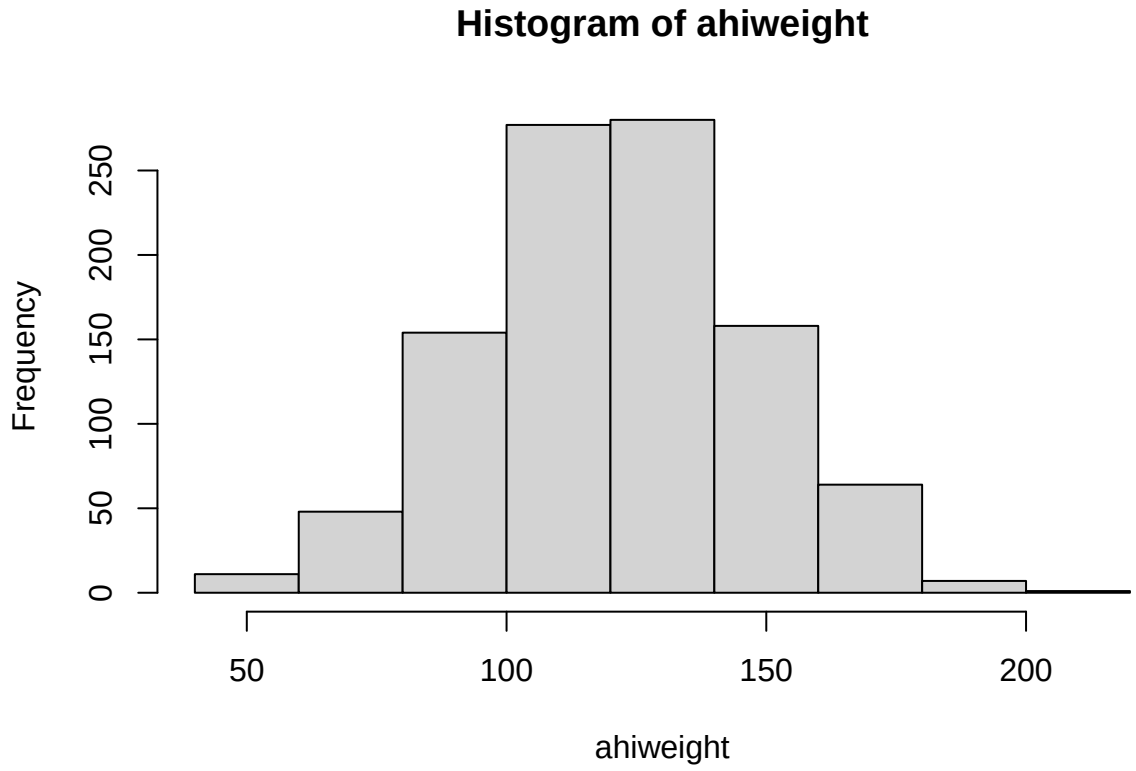
$P(Z < 120 + k) = 0.95$

g. $k = 41.1213$

3.2.5

a.

```r
n=1000
ahiweight=rnorm(n,mean=120, sd=25)
hist(ahiweight)
```



b.

```r
length(which(ahiweight>150))/n
```

```
## [1] 0.131
```

c.

```r
X0=161.1213
length(which(ahiweight>X0))/n
```

```
## [1] 0.058
```

d.

```r
length(which(100>ahiweight & ahiweight>50))/n
```

```
## [1] 0.211
```

e.

```r
k=161.1213
length(which(120+k>ahiweight & ahiweight>120-k))/n
```

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

3.2.6

a.

```r
pnorm(6, mean=4.5, sd=1)
```

```
## [1] 0.9331928
```

$P(Z > 6) = 0.0668072$

b.

```r
qnorm(0.05, mean=4.5, sd=1)
```

```
## [1] 2.855146
```

c.

```r
pnorm(3, mean=4.5, sd=1)
```

```
## [1] 0.0668072
```

```r
pnorm(4, mean=4.5, sd=1)
```

```
## [1] 0.3085375
```

0.2417303

d.

```r
qnorm(0.95, mean=4.5, sd=1)
```

```
## [1] 6.144854
```

k = 1.644854