Statistical Rethinking Chapter 4 problems

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For 03/17/16

4E1 the first one is the likelihood

4E2 two, mu and sigma

4E3 this formula should look very similar to the one on P83

4M1 for the model definition below, simulate observed heights from the prior.

```
library(rethinking)
```

```
## Loading required package: rstan
```

```
## Loading required package: ggplot2
```

```
## Warning: package 'ggplot2' was built under R version 3.2.4
```

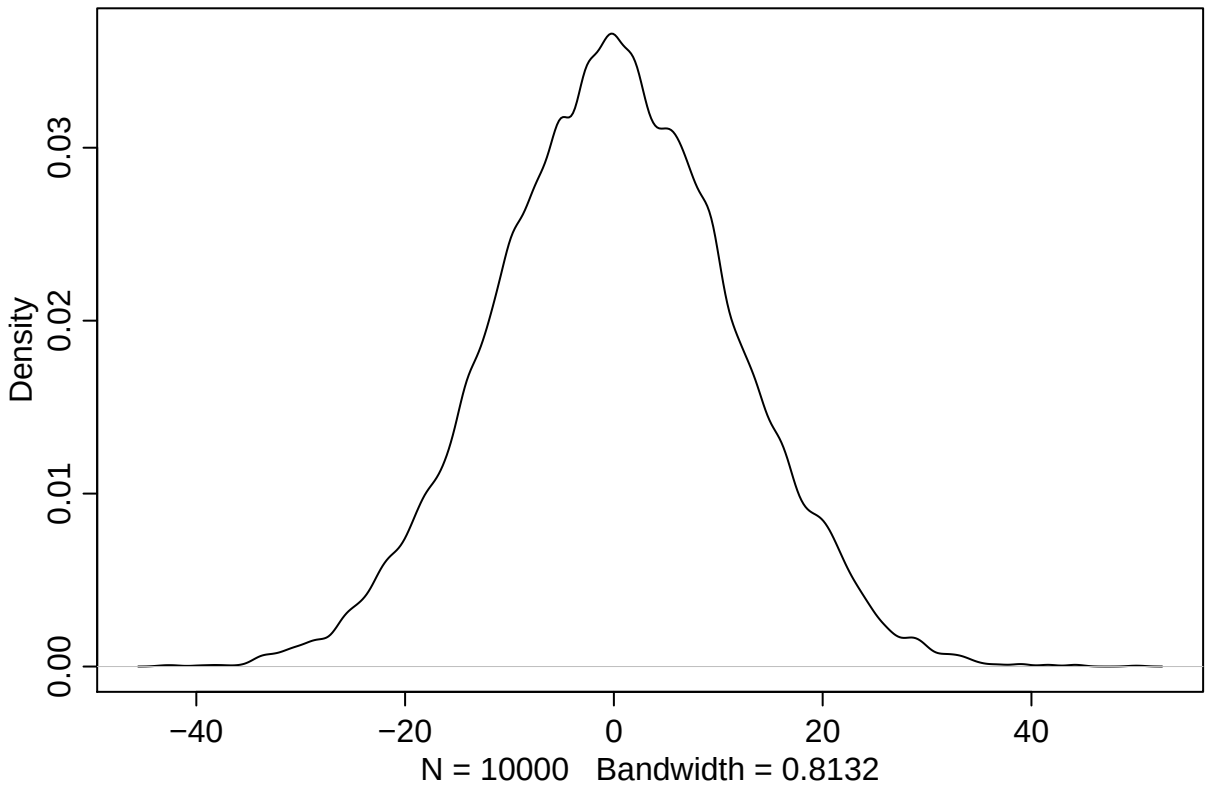
```
## rstan (Version 2.9.0-3, packaged: 2016-02-11 15:54:41 UTC, GitRev: 05c3d0058b6a)
```

```
## For execution on a local, multicore CPU with excess RAM we recommend calling
## rstan_options(auto_write = TRUE)
## options(mc.cores = parallel::detectCores())
```

```
## Loading required package: parallel
```

```
## rethinking (Version 1.58)
```

```
sample_mu <- rnorm(1e4, 0, 10)
sample_sigma <- runif(1e4, 0, 10)
prior <- rnorm(1e4, sample_mu, sample_sigma)
dens(prior)
```



4M2 translate the model into a map formula

```
data("Howell1")
d <- Howell1
d <- d[d$age >=18,]
m <- map(
  alist(
    height ~ dnorm(mu, sigma),
    mu ~ dnorm(0, 10),
    sigma ~ dunif(0, 10)
  ),
  data = d # prblem...
)
```

For 03/24/16

4E4

4E5

4M3

4M4

4M5

4M6

For 03/31/16

4H1

4H2

4H3