Chapter 03 Practice Problems

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Solutions

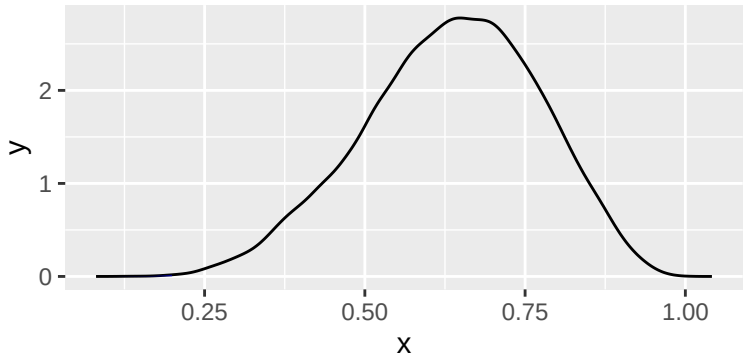
Setup code for problems:

```
p_grid <- seq(from=0, to=1, length.out=1000)
prior <- rep(1, 1000)
likelihood <- dbinom(6, size=9, prob=p_grid)
posterior <- likelihood*prior
posterior <- posterior/sum(posterior)
set.seed(100)
samples <- sample(p_grid, prob=posterior, size=1e4, replace=TRUE)
```

Problem 3E1

```
sum(samples < .2)/length(samples)
```

```
## [1] 4e-04
```

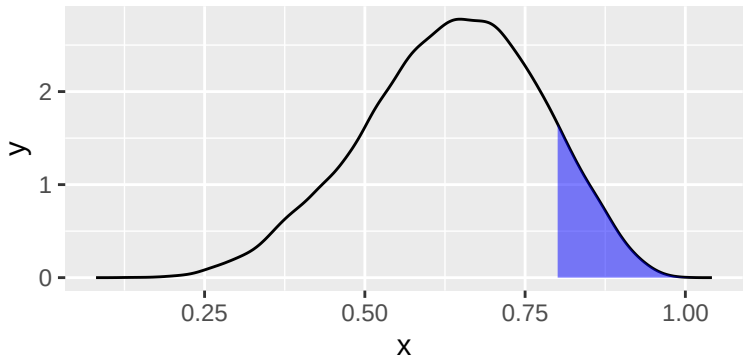


In the above plot, the shaded region (from -Infinity to .2) is too small to see.

Problem 3E2

```
sum(samples > .8)/length(samples)
```

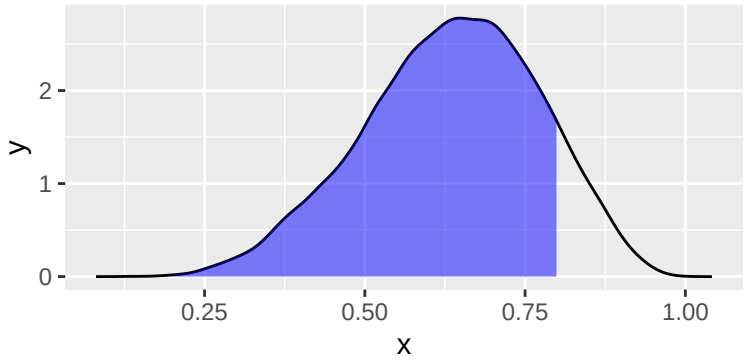
```
## [1] 0.1116
```



Problem 3E3

```
sum(samples > .2 & samples < .8)/length(samples)
```

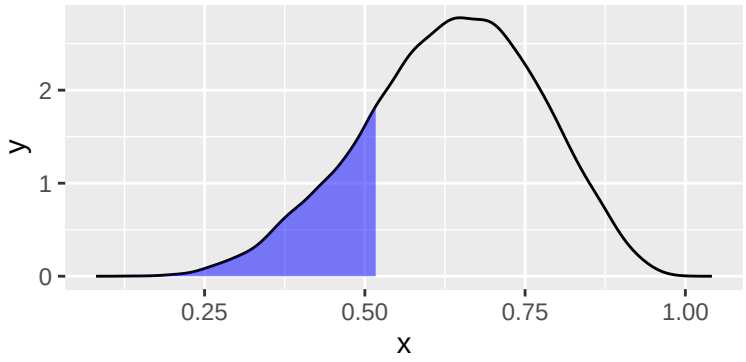
```
## [1] 0.888
```



Problem 3E4

```
quantile(samples, .2)
```

```
##       20%
## 0.5185185
```



Problem 3E5

```
quantile(samples, .8)
```

```
##       80%
## 0.7557558
```