Chapter 6 Exercises

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6-1

A) The value of `sum(approxMass)` is 0.9991. This is less than 1 because it is not using the analytical solution - instead, this is a numerical approximation of the beta distribution.

B) We cannot use theta on the interval from 0 to 1. We must use the midpoints. Using 0 and 1 as endpoints gives an incorrect numerical approximation. While the widths are the same as the other rectangles, the edges actually extend outside of the beta distribution, giving an over-approximation of the area. Indeed, using such a parameterization, we see a total probability estimate of 1.001, which is clearly impossible.

6-2) We'll use the example from the book, for ease and convenience (it's late.)

A)

```
ptheta <- c(50:1, rep(1, 50), 1:50)
ptheta <- ptheta/sum(ptheta)

width = 1/length(ptheta)

theta = seq(from=width/2, to=1-width/2, by=width)
```

B) Now that we have set the prior, consider the posterior.

Come back - this will be more worth it tomorrow.