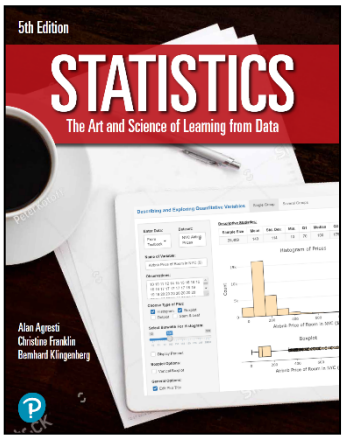

R Code for Examples in the book
"Statistics: The Art and Science of Learning from Data"
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 5

Example 2: Fairness of Rolling Dice – Randomness

Rolling a fair 6-sided die 100 times

```
set.seed(22) # for reproducibility
rolls <- sample(6, 100, replace = TRUE)
```

To obtain the cumulative proportion of the rolls

```
sixes <- rolls == 6
frequency <- cumsum(sixes)
cumulativeFrequency <- frequency / 1:100
cumulativeSum <- cumsum(sixes)
cumulativeProportion <- cumulativeSum / 1:100
```

Plot of the cumulative proportion of the rolls

```
plot(cumulativeProportion, type = 'l',
     main = 'The Cumulative Proportion of Times a 6 Occurs, \n for a
Simulation of 100 Rolls of a Fair Die',
     xlab = 'Trial Number', ylab = 'Cumulative Proportion')
```