

SEC-1-FA2-GROUP-1-SIGUE,-JP-FA2

Sigue, John Patrick A.

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3. An experiment consists of rolling a die. Use R to simulate this experiment 600 times and obtain the relative frequency of each possible outcome.

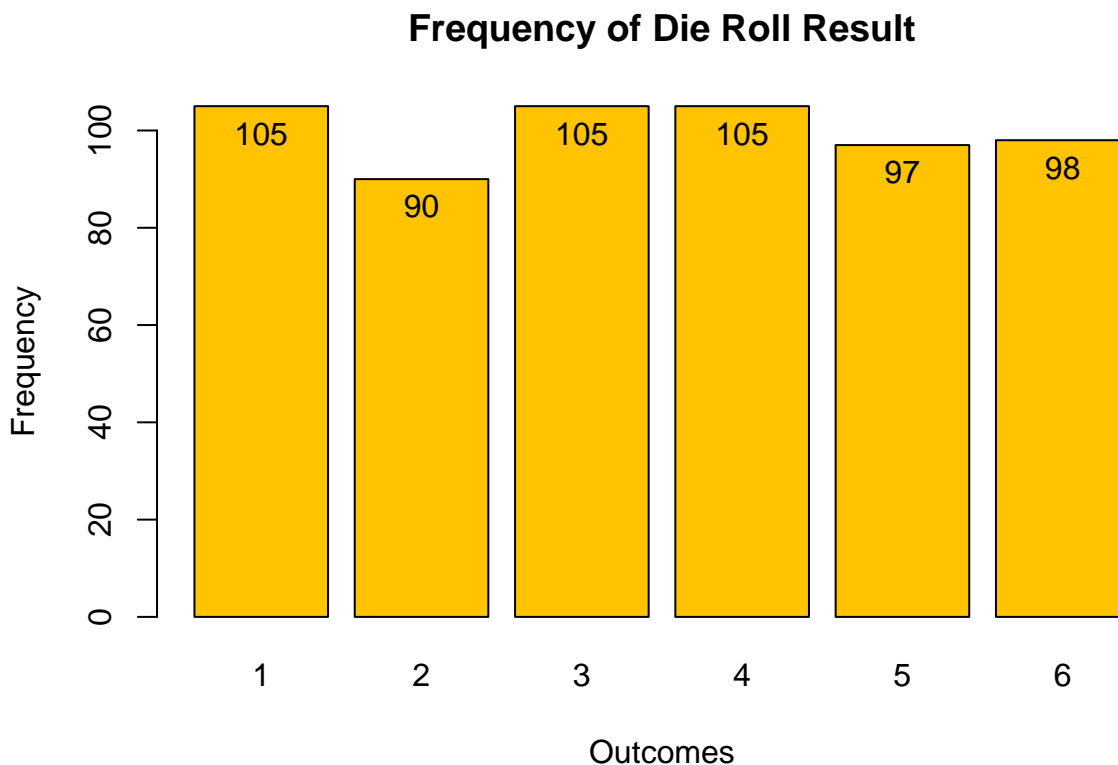
```
possible <- c(1,2,3,4,5,6)

experiment <- sample(possible, 600, replace = TRUE)

results <- data.frame(
  Outcome = possible,
  Frequency = c(sum(experiment == 1), sum(experiment == 2), sum(experiment == 3),
               sum(experiment == 4), sum(experiment == 5), sum(experiment == 6)))

brplt <- barplot(results$Frequency, names.arg = possible, main = "Frequency of Die Roll Result",
  xlab = "Outcomes", ylab = "Frequency", ylim = c(0,max(results$Frequency)), col = "#FFC300")

text(brplt, results$Frequency, labels = results$Frequency,
  cex = 1, pos = 1)
```



Hence, estimate the probability of getting each of 1, 2, 3, 4, 5, and 6.

```
rel_freq <- round(results$Frequency / 600 * 100, 2)

relative_frequency <- data.frame(Outcomes = c(possible, "Total"),
                                "Probability(%)" = c(rel_freq, sum(rel_freq)))

print(relative_frequency)
```

```
## Outcomes Probability...
## 1      1      17.50
## 2      2      15.00
## 3      3      17.50
## 4      4      17.50
## 5      5      16.17
## 6      6      16.33
## 7    Total     100.00
```