**Ejemplo 4.1**

Gastos <- c(80, 75, 65, 84, 40, 60, 49, 50, 38, 39)

library(BSDA)

**SIGN.test(Gastos, md = 48, alternative = "greater")**

 **One-sample Sign-Test**

data: Gastos

s = 7, p-value = 0.1719

alternative hypothesis: true median is greater than 48

95 percent confidence interval:

 39.89333 Inf

sample estimates:

median of x

 55

Achieved and Interpolated Confidence Intervals:

 Conf.Level L.E.pt U.E.pt

Lower Achieved CI 0.9453 40.0000 Inf

Interpolated CI 0.9500 39.8933 Inf

Upper Achieved CI 0.9893 39.0000 Inf

**Ejemplo 4.2**

Calificaciones <- c(2.7, 4.2, 5.3, 6.1, 6.7, 7.2, 8.5, 8.7, 8.9, 9.5, 9.6, 9.7, 9.8, 10)

Aprobados <- (Calificaciones >= 5)

sum(Aprobados)

[1] 12

1-pbinom(11, 14, 0.75)

[1] 0.2811276

**binom.test(12, 14, 0.75, alternative = "greater")**

 **Exact binomial test**

data: 12 and 14

number of successes = 12, number of trials = 14, p-value = 0.2811

alternative hypothesis: true probability of success is greater than 0.75

95 percent confidence interval:

 0.6146103 1.0000000

sample estimates:

probability of success

 0.8571429

**Ejemplo 4.3**

phat <- 50/400

p0 <- 1/10

t <- (phat-p0)/sqrt(p0\*(1-p0)/400)

2\*min(pnorm(t),1-pnorm(t))

[1] 0.0955807

**> z.test(c(rep(1,50), rep(0,350)), mu = 0.1, sigma.x = sqrt(0.1\*0.9))**

 **One-sample z-Test**

data: c(rep(1, 50), rep(0, 350))

z = 1.6667, p-value = 0.09558

alternative hypothesis: true mean is not equal to 0.1

95 percent confidence interval:

 0.09560054 0.15439946

sample estimates:

mean of x

 0.125

**> prop.test(50, n = 400, p = 0.1, correct = F)**

 **1-sample proportions test without continuity correction**

data: 50 out of 400, null probability 0.1

X-squared = 2.7778, df = 1, p-value = 0.09558

alternative hypothesis: true p is not equal to 0.1

95 percent confidence interval:

 0.09611512 0.16101910

sample estimates:

 p

0.125

**> binom.test(50, 400, p = 0.1)**

 **Exact binomial test**

data: 50 and 400

number of successes = 50, number of trials = 400, p-value = 0.09576

alternative hypothesis: true probability of success is not equal to 0.1

95 percent confidence interval:

 0.09421851 0.16145866

sample estimates:

probability of success

 0.125

**Ejemplo 4.1 (bis)**

Gastos <- c(80, 75, 65, 84, 40, 60, 49, 50, 38, 39)

**wilcox.test(Gastos, mu = 48, alternative = "greater")**

 **Wilcoxon signed rank test**

data: Gastos

V = 43, p-value = 0.06543

alternative hypothesis: true location is greater than 48