**Ejercicio 1 – Hoja 6**

Horas <- c(7.2, 8.3, 5.6, 7.4, 7.8, 5.2, 9.1, 5.8)

library(BSDA)

**SIGN.test(Horas, md = 7.5, alternative = "less")**

 **One-sample Sign-Test**

data: Horas

s = 3, p-value = 0.3633

alternative hypothesis: true median is less than 7.5

95 percent confidence interval:

 -Inf 8.232143

sample estimates:

median of x

 7.3

Achieved and Interpolated Confidence Intervals:

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

Lower Achieved CI 0.8555 -Inf 7.8000

Interpolated CI 0.9500 -Inf 8.2321

Upper Achieved CI 0.9648 -Inf 8.3000

**wilcox.test(Horas, mu = 7.5, alternative = "less")**

 **Wilcoxon signed rank test with continuity correction**

data: Horas

V = 11.5, p-value = 0.2001

alternative hypothesis: true location is less than 7.5

Warning message:

In wilcox.test.default(Horas, mu = 7.5, alternative = "less") :

 cannot compute exact p-value with ties

**Ejercicio 2.**

Errores <- c(-0.8, -0.7, -0.4, 1.1, 1.2, 1.5, 1.7, 1.8, 1.9, 2.1)

**SIGN.test(**Errores**, md = 0, alternative = "two.sided")**

 **One-sample Sign-Test**

data: Errores

s = 7, p-value = 0.3437

alternative hypothesis: true median is not equal to 0

95 percent confidence interval:

 -0.6026667 1.8675556

sample estimates:

median of x

 1.35

Achieved and Interpolated Confidence Intervals:

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

Lower Achieved CI 0.8906 -0.4000 1.8000

Interpolated CI 0.9500 -0.6027 1.8676

Upper Achieved CI 0.9785 -0.7000 1.9000

**wilcox.test(Errores, mu = 0, alternative = "two.sided")**

 **Wilcoxon signed rank test**

data: Errores

V = 49, p-value = 0.02734

alternative hypothesis: true location is not equal to 0

**Ejercicio 3.**

Beneficios <- c(3.38, 5.81, 4.46, 4.62, 4.15, 5.44, 6.56, 5.82, 3.95, 5.19)

**SIGN.test(**Beneficios**, md = 4.25, alternative = "greater")**

 **One-sample Sign-Test**

data: Beneficios

s = 7, p-value = 0.1719

alternative hypothesis: true median is greater than 4.25

95 percent confidence interval:

 4.128667 Inf

sample estimates:

median of x

 4.905

Achieved and Interpolated Confidence Intervals:

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

Lower Achieved CI 0.9453 4.1500 Inf

Interpolated CI 0.9500 4.1287 Inf

Upper Achieved CI 0.9893 3.9500 Inf

**wilcox.test(**Beneficios**, mu = 4.25, alternative = "greater")**

 Wilcoxon signed rank test

data: Beneficios

V = 46, p-value = 0.03223

alternative hypothesis: true location is greater than 4.25

**Ejercicio 4.**

**> binom.test(65, n = 225, p = 0.35, alternative = "less")**

 **Exact binomial test**

data: 65 and 225

number of successes = 65, number of trials = 225, p-value = 0.03064

alternative hypothesis: true probability of success is less than 0.35

95 percent confidence interval:

 0.0000000 0.3427185

sample estimates:

probability of success

 0.2888889

**Ejercicio 5.**

Horas <- c(6.4, 7.2, 8.1, 7.4, 7.8, 7.0, 7.0, 6.5, 6.8, 7.9, 8.5, 8.0, 7.6, 7.1, 7.4, 7.2)

Menos <- Horas < 7.4

**binom.test(sum(Menos), n = 16, p = 0.75, alternative = "greater")**

 **Exact binomial test**

data: sum(Menos) and 16

number of successes = 8, number of trials = 16, p-value = 0.9925

alternative hypothesis: true probability of success is greater than 0.75

95 percent confidence interval:

 0.2786027 1.0000000

sample estimates:

probability of success

 0.5

**Ejercicio 6.**

> binom.test(12, 60, 0.15, alternative = "less")

 Exact binomial test

data: 12 and 60

number of successes = 12, number of trials = 60, p-value = 0.8938

alternative hypothesis: true probability of success is less than 0.15

95 percent confidence interval:

 0.0000000 0.3038097

sample estimates: probability of success 0.2

> prop.test(12, 60, 0.15, alternative = "less")

 1-sample proportions test with continuity correction

data: 12 out of 60, null probability 0.15

X-squared = 0.81699, df = 1, p-value = 0.817

alternative hypothesis: true p is less than 0.15

95 percent confidence interval:

 0.0000000 0.3062091

sample estimates: p 0.2

**Ejercicio 7.**

FN <- c(41, 42, 48, 38, 38, 45, 21, 28, 29, 14)

FA <- c(37, 39, 31, 39, 34, 47, 19, 30, 25, 8)

DF <- FN-FA

**SIGN.test(DF, md = 0, alternative = "less")**

 **One-sample Sign-Test**

data: DF

s = 7, p-value = 0.9453

alternative hypothesis: true median is less than 0

95 percent confidence interval:

 -Inf 4.213333

sample estimates:

median of x

 3.5

Achieved and Interpolated Confidence Intervals:

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

Lower Achieved CI 0.9453 -Inf 4.0000

Interpolated CI 0.9500 -Inf 4.2133

Upper Achieved CI 0.9893 -Inf 6.0000