Parašykite duotoms R komandoms hipotezes ir padarykite statistines išvadas. Nustatykite, kokios kiekvienu atveju yra imtys bei koks kriterijus naudojamas.

Duomenys:

> duom

$X

 [1] 6 12 11 9 8 5 1 1 11 1 4 11 14 15 9

$Y

 [1] 2 4 3 3 3 4 3 2 4 1 5 2 4 4 3

$Z

 [1] 1 10 3 4 2 18 16 1 8 10 2 10 8 0 9

a) runs.test(duom$Z)   (package 'lawstat')

      Runs Test - Two sided

data: duom$Z

Standardized Runs Statistic = 0.8257, p-value = 0.409

b) wilcox.test(duom$Y,duom$Z,alternative="less",paired=TRUE)

      Wilcoxon signed rank test with continuity correction

data: duom$Y and duom$Z

V = 19.5, p-value = 0.02029

alternative hypothesis: true location shift is less than 0

c) wilcox.test(duom$Y,duom$Z,alternative="less")

      Wilcoxon rank sum test with continuity correction

data: duom$Y and duom$Z

W = 81, p-value = 0.09676

alternative hypothesis: true location shift is less than 0

d) kruskal.test(duom)

      Kruskal-Wallis rank sum test

data: duom

Kruskal-Wallis chi-squared = 6.4556, df = 2, p-value = 0.03964

e) friedman.test(t(rbind(duom$X,duom$Y,duom$Z)))

      Friedman rank sum test

data: t(rbind(duom$X, duom$Y, duom$Z))

Friedman chi-squared = 6.75, df = 2, p-value = 0.03422