ph1855_hw6_ygu5

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Hollander et al. Nonparametric Statistical Methods 2014

P212 Q1

```
qchisq(.975, 3)
```

```
## [1] 9.348404
```

P224 Q11

```
# input data
X1 = c(0, 1, 3, 3, 5, 10, 13, 17, 26)
X2 = c(0, 6, 7, 9, 11, 13, 20, 20, 24)
X3 = c(0, 5, 8, 9, 11, 13, 16, 17, 20)
X4 = c(1, 5, 12, 13, 19, 22, 25, 27, 29)
psycho_data = list(X1, X2, X3, X4)
library(NSM3)
pJCK(psycho_data)
```

```
## Ties are present, so p-values are based on conditional null distribution.
## Group sizes: 9 9 9 9
## Jonckheere-Terpstra J Statistic: 310
## Monte Carlo (Using 10000 Iterations) upper-tail probability: 0.0296
```

P265 Q47

```
# input data
X = c(0, 1, 3, 3, 5, 10, 13, 17, 26,
      0, 6, 7, 9, 11, 13, 20, 20, 24,
      0, 5, 8, 9, 11, 13, 16, 17, 20,
      1, 5, 12, 13, 19, 22, 25, 27, 29)
g = rep(1:4, each=9)
# implement pairwise comparison
pSDCFlig(X, g)
```

```
## Ties are present, so p-values are based on conditional null distribution.
## Group sizes: 9 9 9 9
## Using the Monte Carlo (with 10000 Iterations) method:
##
## For treatments 1 - 2, the Dwass, Steel, Critchlow-Fligner W Statistic is 1.4391.
## The smallest experimentwise error rate leading to rejection is 0.7746 .
##
## For treatments 1 - 3, the Dwass, Steel, Critchlow-Fligner W Statistic is 1.1894.
## The smallest experimentwise error rate leading to rejection is 0.8612 .
##
## For treatments 1 - 4, the Dwass, Steel, Critchlow-Fligner W Statistic is 2.5027.
## The smallest experimentwise error rate leading to rejection is 0.3006 .
##
## For treatments 2 - 3, the Dwass, Steel, Critchlow-Fligner W Statistic is -0.4389.
## The smallest experimentwise error rate leading to rejection is 0.9936 .
##
## For treatments 2 - 4, the Dwass, Steel, Critchlow-Fligner W Statistic is 1.6251.
## The smallest experimentwise error rate leading to rejection is 0.6992 .
##
## For treatments 3 - 4, the Dwass, Steel, Critchlow-Fligner W Statistic is 2.0626.
## The smallest experimentwise error rate leading to rejection is 0.4978 .
##
```

```r
# find the critical value
cRangeNor(0.05, 4)
```

```
## [1] 3.634
```