Package 'Zar5'

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Type Package

Title Data sets from Biostatistical Analysis

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Depends R (>= 2.12), plyr

Description Data sets from Biostatistical Analysis (5th edition) by Jerrold H. Zar.

License GPL-2

LazyLoad yes

LazyData yes

Encoding UTF-8

Collate 'CV.test.R' 'Zar5-package.R'

R topics documented:

Zar5-package *Zar5*

Description

Data sets and example code for Zar's Biostatistical Analysis (5th Edition).

Details

Package:	Zar5
Type:	Package
Version:	0.1-6
Date:	2011-02-15
License:	GPL
LazyLoad:	yes
LazyData:	yes

Author(s)

Kevin Middleton (<kmm@csusb.edu>)

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

CV.test *Coefficient of Variation Test*

Description

Coefficient of Variation Test

Usage

```
CV.test(x1, x2, test = "F")
```

Arguments

x1	a numeric vector
x2	a numeric vector
test	the type of test to perform, "F" for a variance-ratio test or "Z" for a *Z* test.

Details

`CV.test` tests for the difference in coefficients of variations for two variables (`x1` and `x2`), using either a variance ratio (*F*) test (default) or a *Z* test.

The variance-ratio test was described by Lewontin (1966), but apparently dates back to Wright (1952) and Bader and Lehman (1965). This test involves a ratio of log-transformed variances, which follows an *F*-distribution with $n_1 - 1$ and $n_2 - 1$ degrees of freedom.

Miller (1991) describes a *Z* test that does not involve a log-transformation, provided that the data are positive and normally distributed. The *Z* test performs best if the coefficients of variation are less than 0.33.

Value

`CV1, CV2`	Coefficients of variation for `x1` and `x2`. If `test = "F"`, the coefficients of variation are reported in the original (non-log-transformed) units.
`test`	The type of test performed, "F" or "Z"
`test.stat`	The test statistic for `test`
`p`	P-value for the test statistic

Author(s)

Kevin Middleton (<kmm@csusb.edu>)

References

Bader, R.S. and W.H. Lehman. 1965. Phenotypic and genotypic variation in odontometric traits of the house mouse. *American Midlands Naturalist* 74: 28-38.

Lewontin, R.C. 1966. On the measurement of relative variability. *Systematic Zoology* 15: 141-142. http://www.jstor.org/stable/2411632

Miller, G.E. 1991. Asymptotic test statistics for coefficients of variation. *Communications in Statistics-Theory and Methods* 20: 2251-2262.

Wright, S. 1952. The genetics of quantitative variability. *In:* Reeve, E.C.R. and C. Waddington (eds.). *Quantitative Inheritance*. pp. 5-41. H.M.S.O., London.

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
Weight <- ex08.08$Weight
Height <- ex08.08$Height
CV.test(Weight, Height, test = "F")
CV.test(Weight, Height, test = "Z")
```

`ex07.03` *Zar Data Set: ex07.03*

Description

Zar Data Set: ex07.03

Format

The format is: num [1:12] 0.2 -0.5 -1.3 -1.6 -0.7 0.4 -0.1 0 -0.6 -1.1 ...

Details

Zar Data Set: ex07.03

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex07.03)
```

`ex08.08` *Zar Data Set: ex08.08*

Description

Zar Data Set: ex08.08

Format

The format is: List of 2

`$Weight` num [1:10] 72.5 71.7 60.8 63.2 71.4 73.1 77.9 75.7 72 69

`$Height` num [1:11] 183 172 180 190 191 ...

Details

Zar Data Set: ex08.08

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex08.08)
```

`ex08.11` *Zar Data Set: ex08.11*

Description

Zar Data Set: ex08.11

Format

The format is: List of 2

`$Males` num [1:7] 193 188 185 183 180 175 170

`$Females` num [1:5] 178 173 168 165 163

Details

Zar Data Set: ex08.11

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex08.11)
```

`ex10.01` *Zar Data Set: ex10.01*

Description

Zar Data Set: ex10.01

Format

A data frame with 20 observations on the following 2 variables.

`X` a numeric vector

`Feed` a factor with levels `1`, `2`, `3`, and `4`

Details

Zar Data Set: ex10.01

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex10.01)
```

`ex10.02` *Zar Data Set: ex10.02*

Description

Zar Data Set: ex10.02

Format

A data frame with 20 observations on the following 2 variables.

`X` a numeric vector

`Tech` a factor with levels `1`, `2`, `3`, and `4`

Details

Zar Data Set: ex10.02

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex10.02)
```

`ex10.03` *Zar Data Set: ex10.03*

Description

Zar Data Set: ex10.03

Format

A data frame with 18 observations on the following 2 variables.

`Variety` a factor with 3 levels: `G`, `A`, and `L`

`K` a numeric vector

Details

Zar Data Set: ex10.03

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex10.03)
```

`ex12.01` *Zar Data Set: ex12.01*

Description

Zar Data Set: ex12.01

Format

A data frame with 20 observations on the following 3 variables.

`Ca` a numeric vector

`Trt` a factor with levels `No` and `Yes`

`Sex` a factor with levels `F` and `M`

Details

Zar Data Set: ex12.01

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex12.01)
```

`ex13.03` *Zar Data Set: ex13.03*

Description

Zar Data Set: ex13.03

Format

A data frame with 5 observations on the following 4 variables.

`Group.1` a numeric vector

`Group.2` a numeric vector

`Group.3` a numeric vector

`Group.4` a numeric vector

Details

Zar Data Set: ex13.03

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex13.03)
```

`ex13.04` *Zar Data Set: ex13.04*

Description

Zar Data Set: ex13.04

Format

A data frame with 7 observations on the following 2 variables.

`insecticide1` a numeric vector

`insecticide2` a numeric vector

Details

Zar Data Set: ex13.04

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex13.04)
```

`ex15.01` *Zar Data Set: ex15.01*

Description

Zar Data Set: ex15.01

Format

A data frame with 12 observations on the following 3 variables.

`Chol` a numeric vector

`Drug` a factor with levels `1`, `2`, and `3`

`Source` a factor with levels `A`, `B`, `D`, `L`, `Q`, and `S`

Details

Zar Data Set: ex15.01

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex15.01)
```

`ex16.01` *Zar Data Set: ex16.01*

Description

Zar Data Set: ex16.01

Format

A data frame with 20 observations on the following 3 variables.

`fat` a numeric vector

`lean` a numeric vector

`month` a factor with levels `Dec`, `Feb`, `Jan`, and `Mar`

Details

Zar Data Set: ex16.01

References

Zar, J.H. 2010. *Biostatistical Analysis*. 5th Edition. Pearson Prentice-Hall. Upper Saddle River, NJ. ISBN-10: 0131008463. ISBN-13: 978013100846. http://www.pearsonhighered.com/educator/product/Biostatistical-Analysis/9780131008465.page

Examples

```
demo(ex16.01)
```

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