

byparser.r

denis

2021-07-15

```
#!/usr/bin/r

# Comparison of BayesFactor against other packages
# This R markdown file runs a series of tests to ensure that the BayesFactor
# package is giving correct answers, and can gracefully handle probable input.
library(arm)

## Loading required package: MASS

## Loading required package: Matrix

## Loading required package: lme4

##
## arm (Version 1.11-2, built: 2020-7-27)

## Working directory is /home/denis/projects/perl/perlstyle/matrix/bin/desktop/coffeelp

library(lme4)

# ANOVA
# First we generate some data.
# Number of participants
N <- 20
sig2 <- 1
sig2ID <- 1

# 3x3x3 design, with participant as random factor
effects <- expand.grid(A = c("A1", "A2", "A3"),
                      B = c("B1", "B2", "B3"),
                      C = c("C1", "C2", "C3"),
                      ID = paste("Sub", 1:N, sep = ""))
Xdata <- c(N*sig2*sig2ID, data = effects)
beta <- matrix(c(50, -.2, .2, 0, 0, -.1, -.1, rnorm(N-1,0,sqrt(sig2ID)),
                0,0,0,0,-.1,.1,.1,-.1,0,0,0,0,
                0,0,0,0,0,0,0,0),
              ncol = 1)
effects$A = rnorm(sqrt(sig2))
# Typical repeated measures ANOVA
mns <- c(effects$A, list(effects$B, effects$c, effects$ID), mean)
mns
```

```
## [[1]]
## [1] -0.1219519
##
## [[2]]
## [1] -0.1219519
##
## [[3]]
## [1] -0.1219519
##
## [[4]]
## [1] -0.1219519
##
## [[5]]
## [1] -0.1219519
##
## [[6]]
## [1] -0.1219519
##
## [[7]]
## [1] -0.1219519
##
## [[8]]
## [1] -0.1219519
##
## [[9]]
## [1] -0.1219519
##
## [[10]]
## [1] -0.1219519
##
## [[11]]
## [1] -0.1219519
##
## [[12]]
## [1] -0.1219519
##
## [[13]]
## [1] -0.1219519
##
## [[14]]
## [1] -0.1219519
##
## [[15]]
## [1] -0.1219519
##
## [[16]]
## [1] -0.1219519
##
## [[17]]
## [1] -0.1219519
##
## [[18]]
## [1] -0.1219519
##
```

```
## [[19]]
## [1] -0.1219519
##
## [[20]]
## [1] -0.1219519
##
## [[21]]
## [1] -0.1219519
##
## [[22]]
## [1] -0.1219519
##
## [[23]]
## [1] -0.1219519
##
## [[24]]
## [1] -0.1219519
##
## [[25]]
## [1] -0.1219519
##
## [[26]]
## [1] -0.1219519
##
## [[27]]
## [1] -0.1219519
##
## [[28]]
## [1] -0.1219519
##
## [[29]]
## [1] -0.1219519
##
## [[30]]
## [1] -0.1219519
##
## [[31]]
## [1] -0.1219519
##
## [[32]]
## [1] -0.1219519
##
## [[33]]
## [1] -0.1219519
##
## [[34]]
## [1] -0.1219519
##
## [[35]]
## [1] -0.1219519
##
## [[36]]
## [1] -0.1219519
##
```

```
## [[37]]
## [1] -0.1219519
##
## [[38]]
## [1] -0.1219519
##
## [[39]]
## [1] -0.1219519
##
## [[40]]
## [1] -0.1219519
##
## [[41]]
## [1] -0.1219519
##
## [[42]]
## [1] -0.1219519
##
## [[43]]
## [1] -0.1219519
##
## [[44]]
## [1] -0.1219519
##
## [[45]]
## [1] -0.1219519
##
## [[46]]
## [1] -0.1219519
##
## [[47]]
## [1] -0.1219519
##
## [[48]]
## [1] -0.1219519
##
## [[49]]
## [1] -0.1219519
##
## [[50]]
## [1] -0.1219519
##
## [[51]]
## [1] -0.1219519
##
## [[52]]
## [1] -0.1219519
##
## [[53]]
## [1] -0.1219519
##
## [[54]]
## [1] -0.1219519
##
```

```
## [[55]]
## [1] -0.1219519
##
## [[56]]
## [1] -0.1219519
##
## [[57]]
## [1] -0.1219519
##
## [[58]]
## [1] -0.1219519
##
## [[59]]
## [1] -0.1219519
##
## [[60]]
## [1] -0.1219519
##
## [[61]]
## [1] -0.1219519
##
## [[62]]
## [1] -0.1219519
##
## [[63]]
## [1] -0.1219519
##
## [[64]]
## [1] -0.1219519
##
## [[65]]
## [1] -0.1219519
##
## [[66]]
## [1] -0.1219519
##
## [[67]]
## [1] -0.1219519
##
## [[68]]
## [1] -0.1219519
##
## [[69]]
## [1] -0.1219519
##
## [[70]]
## [1] -0.1219519
##
## [[71]]
## [1] -0.1219519
##
## [[72]]
## [1] -0.1219519
##
```

```
## [[73]]
## [1] -0.1219519
##
## [[74]]
## [1] -0.1219519
##
## [[75]]
## [1] -0.1219519
##
## [[76]]
## [1] -0.1219519
##
## [[77]]
## [1] -0.1219519
##
## [[78]]
## [1] -0.1219519
##
## [[79]]
## [1] -0.1219519
##
## [[80]]
## [1] -0.1219519
##
## [[81]]
## [1] -0.1219519
##
## [[82]]
## [1] -0.1219519
##
## [[83]]
## [1] -0.1219519
##
## [[84]]
## [1] -0.1219519
##
## [[85]]
## [1] -0.1219519
##
## [[86]]
## [1] -0.1219519
##
## [[87]]
## [1] -0.1219519
##
## [[88]]
## [1] -0.1219519
##
## [[89]]
## [1] -0.1219519
##
## [[90]]
## [1] -0.1219519
##
```

```

## [[91]]
## [1] -0.1219519
##
## [[92]]
## [1] -0.1219519
##
## [[93]]
## [1] -0.1219519
##
## [[94]]
## [1] -0.1219519
##
## [[95]]
## [1] -0.1219519
##
## [[96]]
## [1] -0.1219519
##
## [[97]]
## [1] -0.1219519
##
## [[98]]
## [1] -0.1219519
##
## [[99]]
## [1] -0.1219519
##
## [[100]]
## [1] -0.1219519
##
## [[101]]
## [1] -0.1219519
##
## [[102]]
## [1] -0.1219519
##
## [[103]]
## [1] -0.1219519
##
## [[104]]
## [1] -0.1219519
##
## [[105]]
## [1] -0.1219519
##
## [[106]]
## [1] -0.1219519
##
## [[107]]
## [1] -0.1219519
##
## [[108]]
## [1] -0.1219519
##

```

```

## [[109]]
## [1] -0.1219519
##
## [[110]]
## [1] -0.1219519
##
## [[111]]
## [1] -0.1219519
##
## [[112]]
## [1] -0.1219519
##
## [[113]]
## [1] -0.1219519
##
## [[114]]
## [1] -0.1219519
##
## [[115]]
## [1] -0.1219519
##
## [[116]]
## [1] -0.1219519
##
## [[117]]
## [1] -0.1219519
##
## [[118]]
## [1] -0.1219519
##
## [[119]]
## [1] -0.1219519
##
## [[120]]
## [1] -0.1219519
##
## [[121]]
## [1] -0.1219519
##
## [[122]]
## [1] -0.1219519
##
## [[123]]
## [1] -0.1219519
##
## [[124]]
## [1] -0.1219519
##
## [[125]]
## [1] -0.1219519
##
## [[126]]
## [1] -0.1219519
##

```



```

## [[127]]
## [1] -0.1219519
##
## [[128]]
## [1] -0.1219519
##
## [[129]]
## [1] -0.1219519
##
## [[130]]
## [1] -0.1219519
##
## [[131]]
## [1] -0.1219519
##
## [[132]]
## [1] -0.1219519
##
## [[133]]
## [1] -0.1219519
##
## [[134]]
## [1] -0.1219519
##
## [[135]]
## [1] -0.1219519
##
## [[136]]
## [1] -0.1219519
##
## [[137]]
## [1] -0.1219519
##
## [[138]]
## [1] -0.1219519
##
## [[139]]
## [1] -0.1219519
##
## [[140]]
## [1] -0.1219519
##
## [[141]]
## [1] -0.1219519
##
## [[142]]
## [1] -0.1219519
##
## [[143]]
## [1] -0.1219519
##
## [[144]]
## [1] -0.1219519
##

```

```
## [[145]]
## [1] -0.1219519
##
## [[146]]
## [1] -0.1219519
##
## [[147]]
## [1] -0.1219519
##
## [[148]]
## [1] -0.1219519
##
## [[149]]
## [1] -0.1219519
##
## [[150]]
## [1] -0.1219519
##
## [[151]]
## [1] -0.1219519
##
## [[152]]
## [1] -0.1219519
##
## [[153]]
## [1] -0.1219519
##
## [[154]]
## [1] -0.1219519
##
## [[155]]
## [1] -0.1219519
##
## [[156]]
## [1] -0.1219519
##
## [[157]]
## [1] -0.1219519
##
## [[158]]
## [1] -0.1219519
##
## [[159]]
## [1] -0.1219519
##
## [[160]]
## [1] -0.1219519
##
## [[161]]
## [1] -0.1219519
##
## [[162]]
## [1] -0.1219519
##
```

```
## [[163]]
## [1] -0.1219519
##
## [[164]]
## [1] -0.1219519
##
## [[165]]
## [1] -0.1219519
##
## [[166]]
## [1] -0.1219519
##
## [[167]]
## [1] -0.1219519
##
## [[168]]
## [1] -0.1219519
##
## [[169]]
## [1] -0.1219519
##
## [[170]]
## [1] -0.1219519
##
## [[171]]
## [1] -0.1219519
##
## [[172]]
## [1] -0.1219519
##
## [[173]]
## [1] -0.1219519
##
## [[174]]
## [1] -0.1219519
##
## [[175]]
## [1] -0.1219519
##
## [[176]]
## [1] -0.1219519
##
## [[177]]
## [1] -0.1219519
##
## [[178]]
## [1] -0.1219519
##
## [[179]]
## [1] -0.1219519
##
## [[180]]
## [1] -0.1219519
##
```

```
## [[181]]
## [1] -0.1219519
##
## [[182]]
## [1] -0.1219519
##
## [[183]]
## [1] -0.1219519
##
## [[184]]
## [1] -0.1219519
##
## [[185]]
## [1] -0.1219519
##
## [[186]]
## [1] -0.1219519
##
## [[187]]
## [1] -0.1219519
##
## [[188]]
## [1] -0.1219519
##
## [[189]]
## [1] -0.1219519
##
## [[190]]
## [1] -0.1219519
##
## [[191]]
## [1] -0.1219519
##
## [[192]]
## [1] -0.1219519
##
## [[193]]
## [1] -0.1219519
##
## [[194]]
## [1] -0.1219519
##
## [[195]]
## [1] -0.1219519
##
## [[196]]
## [1] -0.1219519
##
## [[197]]
## [1] -0.1219519
##
## [[198]]
## [1] -0.1219519
##
```

```

## [[199]]
## [1] -0.1219519
##
## [[200]]
## [1] -0.1219519
##
## [[201]]
## [1] -0.1219519
##
## [[202]]
## [1] -0.1219519
##
## [[203]]
## [1] -0.1219519
##
## [[204]]
## [1] -0.1219519
##
## [[205]]
## [1] -0.1219519
##
## [[206]]
## [1] -0.1219519
##
## [[207]]
## [1] -0.1219519
##
## [[208]]
## [1] -0.1219519
##
## [[209]]
## [1] -0.1219519
##
## [[210]]
## [1] -0.1219519
##
## [[211]]
## [1] -0.1219519
##
## [[212]]
## [1] -0.1219519
##
## [[213]]
## [1] -0.1219519
##
## [[214]]
## [1] -0.1219519
##
## [[215]]
## [1] -0.1219519
##
## [[216]]
## [1] -0.1219519
##

```

```

## [[217]]
## [1] -0.1219519
##
## [[218]]
## [1] -0.1219519
##
## [[219]]
## [1] -0.1219519
##
## [[220]]
## [1] -0.1219519
##
## [[221]]
## [1] -0.1219519
##
## [[222]]
## [1] -0.1219519
##
## [[223]]
## [1] -0.1219519
##
## [[224]]
## [1] -0.1219519
##
## [[225]]
## [1] -0.1219519
##
## [[226]]
## [1] -0.1219519
##
## [[227]]
## [1] -0.1219519
##
## [[228]]
## [1] -0.1219519
##
## [[229]]
## [1] -0.1219519
##
## [[230]]
## [1] -0.1219519
##
## [[231]]
## [1] -0.1219519
##
## [[232]]
## [1] -0.1219519
##
## [[233]]
## [1] -0.1219519
##
## [[234]]
## [1] -0.1219519
##

```

```
## [[235]]
## [1] -0.1219519
##
## [[236]]
## [1] -0.1219519
##
## [[237]]
## [1] -0.1219519
##
## [[238]]
## [1] -0.1219519
##
## [[239]]
## [1] -0.1219519
##
## [[240]]
## [1] -0.1219519
##
## [[241]]
## [1] -0.1219519
##
## [[242]]
## [1] -0.1219519
##
## [[243]]
## [1] -0.1219519
##
## [[244]]
## [1] -0.1219519
##
## [[245]]
## [1] -0.1219519
##
## [[246]]
## [1] -0.1219519
##
## [[247]]
## [1] -0.1219519
##
## [[248]]
## [1] -0.1219519
##
## [[249]]
## [1] -0.1219519
##
## [[250]]
## [1] -0.1219519
##
## [[251]]
## [1] -0.1219519
##
## [[252]]
## [1] -0.1219519
##
```

```
## [[253]]
## [1] -0.1219519
##
## [[254]]
## [1] -0.1219519
##
## [[255]]
## [1] -0.1219519
##
## [[256]]
## [1] -0.1219519
##
## [[257]]
## [1] -0.1219519
##
## [[258]]
## [1] -0.1219519
##
## [[259]]
## [1] -0.1219519
##
## [[260]]
## [1] -0.1219519
##
## [[261]]
## [1] -0.1219519
##
## [[262]]
## [1] -0.1219519
##
## [[263]]
## [1] -0.1219519
##
## [[264]]
## [1] -0.1219519
##
## [[265]]
## [1] -0.1219519
##
## [[266]]
## [1] -0.1219519
##
## [[267]]
## [1] -0.1219519
##
## [[268]]
## [1] -0.1219519
##
## [[269]]
## [1] -0.1219519
##
## [[270]]
## [1] -0.1219519
##
```



```
## [[271]]
## [1] -0.1219519
##
## [[272]]
## [1] -0.1219519
##
## [[273]]
## [1] -0.1219519
##
## [[274]]
## [1] -0.1219519
##
## [[275]]
## [1] -0.1219519
##
## [[276]]
## [1] -0.1219519
##
## [[277]]
## [1] -0.1219519
##
## [[278]]
## [1] -0.1219519
##
## [[279]]
## [1] -0.1219519
##
## [[280]]
## [1] -0.1219519
##
## [[281]]
## [1] -0.1219519
##
## [[282]]
## [1] -0.1219519
##
## [[283]]
## [1] -0.1219519
##
## [[284]]
## [1] -0.1219519
##
## [[285]]
## [1] -0.1219519
##
## [[286]]
## [1] -0.1219519
##
## [[287]]
## [1] -0.1219519
##
## [[288]]
## [1] -0.1219519
##
```

```

## [[289]]
## [1] -0.1219519
##
## [[290]]
## [1] -0.1219519
##
## [[291]]
## [1] -0.1219519
##
## [[292]]
## [1] -0.1219519
##
## [[293]]
## [1] -0.1219519
##
## [[294]]
## [1] -0.1219519
##
## [[295]]
## [1] -0.1219519
##
## [[296]]
## [1] -0.1219519
##
## [[297]]
## [1] -0.1219519
##
## [[298]]
## [1] -0.1219519
##
## [[299]]
## [1] -0.1219519
##
## [[300]]
## [1] -0.1219519
##
## [[301]]
## [1] -0.1219519
##
## [[302]]
## [1] -0.1219519
##
## [[303]]
## [1] -0.1219519
##
## [[304]]
## [1] -0.1219519
##
## [[305]]
## [1] -0.1219519
##
## [[306]]
## [1] -0.1219519
##

```

```

## [[307]]
## [1] -0.1219519
##
## [[308]]
## [1] -0.1219519
##
## [[309]]
## [1] -0.1219519
##
## [[310]]
## [1] -0.1219519
##
## [[311]]
## [1] -0.1219519
##
## [[312]]
## [1] -0.1219519
##
## [[313]]
## [1] -0.1219519
##
## [[314]]
## [1] -0.1219519
##
## [[315]]
## [1] -0.1219519
##
## [[316]]
## [1] -0.1219519
##
## [[317]]
## [1] -0.1219519
##
## [[318]]
## [1] -0.1219519
##
## [[319]]
## [1] -0.1219519
##
## [[320]]
## [1] -0.1219519
##
## [[321]]
## [1] -0.1219519
##
## [[322]]
## [1] -0.1219519
##
## [[323]]
## [1] -0.1219519
##
## [[324]]
## [1] -0.1219519
##

```

```

## [[325]]
## [1] -0.1219519
##
## [[326]]
## [1] -0.1219519
##
## [[327]]
## [1] -0.1219519
##
## [[328]]
## [1] -0.1219519
##
## [[329]]
## [1] -0.1219519
##
## [[330]]
## [1] -0.1219519
##
## [[331]]
## [1] -0.1219519
##
## [[332]]
## [1] -0.1219519
##
## [[333]]
## [1] -0.1219519
##
## [[334]]
## [1] -0.1219519
##
## [[335]]
## [1] -0.1219519
##
## [[336]]
## [1] -0.1219519
##
## [[337]]
## [1] -0.1219519
##
## [[338]]
## [1] -0.1219519
##
## [[339]]
## [1] -0.1219519
##
## [[340]]
## [1] -0.1219519
##
## [[341]]
## [1] -0.1219519
##
## [[342]]
## [1] -0.1219519
##

```

```
## [[343]]
## [1] -0.1219519
##
## [[344]]
## [1] -0.1219519
##
## [[345]]
## [1] -0.1219519
##
## [[346]]
## [1] -0.1219519
##
## [[347]]
## [1] -0.1219519
##
## [[348]]
## [1] -0.1219519
##
## [[349]]
## [1] -0.1219519
##
## [[350]]
## [1] -0.1219519
##
## [[351]]
## [1] -0.1219519
##
## [[352]]
## [1] -0.1219519
##
## [[353]]
## [1] -0.1219519
##
## [[354]]
## [1] -0.1219519
##
## [[355]]
## [1] -0.1219519
##
## [[356]]
## [1] -0.1219519
##
## [[357]]
## [1] -0.1219519
##
## [[358]]
## [1] -0.1219519
##
## [[359]]
## [1] -0.1219519
##
## [[360]]
## [1] -0.1219519
##
```

```
## [[361]]
## [1] -0.1219519
##
## [[362]]
## [1] -0.1219519
##
## [[363]]
## [1] -0.1219519
##
## [[364]]
## [1] -0.1219519
##
## [[365]]
## [1] -0.1219519
##
## [[366]]
## [1] -0.1219519
##
## [[367]]
## [1] -0.1219519
##
## [[368]]
## [1] -0.1219519
##
## [[369]]
## [1] -0.1219519
##
## [[370]]
## [1] -0.1219519
##
## [[371]]
## [1] -0.1219519
##
## [[372]]
## [1] -0.1219519
##
## [[373]]
## [1] -0.1219519
##
## [[374]]
## [1] -0.1219519
##
## [[375]]
## [1] -0.1219519
##
## [[376]]
## [1] -0.1219519
##
## [[377]]
## [1] -0.1219519
##
## [[378]]
## [1] -0.1219519
##
```

```
## [[379]]
## [1] -0.1219519
##
## [[380]]
## [1] -0.1219519
##
## [[381]]
## [1] -0.1219519
##
## [[382]]
## [1] -0.1219519
##
## [[383]]
## [1] -0.1219519
##
## [[384]]
## [1] -0.1219519
##
## [[385]]
## [1] -0.1219519
##
## [[386]]
## [1] -0.1219519
##
## [[387]]
## [1] -0.1219519
##
## [[388]]
## [1] -0.1219519
##
## [[389]]
## [1] -0.1219519
##
## [[390]]
## [1] -0.1219519
##
## [[391]]
## [1] -0.1219519
##
## [[392]]
## [1] -0.1219519
##
## [[393]]
## [1] -0.1219519
##
## [[394]]
## [1] -0.1219519
##
## [[395]]
## [1] -0.1219519
##
## [[396]]
## [1] -0.1219519
##
```

```

## [[397]]
## [1] -0.1219519
##
## [[398]]
## [1] -0.1219519
##
## [[399]]
## [1] -0.1219519
##
## [[400]]
## [1] -0.1219519
##
## [[401]]
## [1] -0.1219519
##
## [[402]]
## [1] -0.1219519
##
## [[403]]
## [1] -0.1219519
##
## [[404]]
## [1] -0.1219519
##
## [[405]]
## [1] -0.1219519
##
## [[406]]
## [1] -0.1219519
##
## [[407]]
## [1] -0.1219519
##
## [[408]]
## [1] -0.1219519
##
## [[409]]
## [1] -0.1219519
##
## [[410]]
## [1] -0.1219519
##
## [[411]]
## [1] -0.1219519
##
## [[412]]
## [1] -0.1219519
##
## [[413]]
## [1] -0.1219519
##
## [[414]]
## [1] -0.1219519
##

```



```

## [[415]]
## [1] -0.1219519
##
## [[416]]
## [1] -0.1219519
##
## [[417]]
## [1] -0.1219519
##
## [[418]]
## [1] -0.1219519
##
## [[419]]
## [1] -0.1219519
##
## [[420]]
## [1] -0.1219519
##
## [[421]]
## [1] -0.1219519
##
## [[422]]
## [1] -0.1219519
##
## [[423]]
## [1] -0.1219519
##
## [[424]]
## [1] -0.1219519
##
## [[425]]
## [1] -0.1219519
##
## [[426]]
## [1] -0.1219519
##
## [[427]]
## [1] -0.1219519
##
## [[428]]
## [1] -0.1219519
##
## [[429]]
## [1] -0.1219519
##
## [[430]]
## [1] -0.1219519
##
## [[431]]
## [1] -0.1219519
##
## [[432]]
## [1] -0.1219519
##

```

```

## [[433]]
## [1] -0.1219519
##
## [[434]]
## [1] -0.1219519
##
## [[435]]
## [1] -0.1219519
##
## [[436]]
## [1] -0.1219519
##
## [[437]]
## [1] -0.1219519
##
## [[438]]
## [1] -0.1219519
##
## [[439]]
## [1] -0.1219519
##
## [[440]]
## [1] -0.1219519
##
## [[441]]
## [1] -0.1219519
##
## [[442]]
## [1] -0.1219519
##
## [[443]]
## [1] -0.1219519
##
## [[444]]
## [1] -0.1219519
##
## [[445]]
## [1] -0.1219519
##
## [[446]]
## [1] -0.1219519
##
## [[447]]
## [1] -0.1219519
##
## [[448]]
## [1] -0.1219519
##
## [[449]]
## [1] -0.1219519
##
## [[450]]
## [1] -0.1219519
##

```

```

## [[451]]
## [1] -0.1219519
##
## [[452]]
## [1] -0.1219519
##
## [[453]]
## [1] -0.1219519
##
## [[454]]
## [1] -0.1219519
##
## [[455]]
## [1] -0.1219519
##
## [[456]]
## [1] -0.1219519
##
## [[457]]
## [1] -0.1219519
##
## [[458]]
## [1] -0.1219519
##
## [[459]]
## [1] -0.1219519
##
## [[460]]
## [1] -0.1219519
##
## [[461]]
## [1] -0.1219519
##
## [[462]]
## [1] -0.1219519
##
## [[463]]
## [1] -0.1219519
##
## [[464]]
## [1] -0.1219519
##
## [[465]]
## [1] -0.1219519
##
## [[466]]
## [1] -0.1219519
##
## [[467]]
## [1] -0.1219519
##
## [[468]]
## [1] -0.1219519
##

```

```
## [[469]]
## [1] -0.1219519
##
## [[470]]
## [1] -0.1219519
##
## [[471]]
## [1] -0.1219519
##
## [[472]]
## [1] -0.1219519
##
## [[473]]
## [1] -0.1219519
##
## [[474]]
## [1] -0.1219519
##
## [[475]]
## [1] -0.1219519
##
## [[476]]
## [1] -0.1219519
##
## [[477]]
## [1] -0.1219519
##
## [[478]]
## [1] -0.1219519
##
## [[479]]
## [1] -0.1219519
##
## [[480]]
## [1] -0.1219519
##
## [[481]]
## [1] -0.1219519
##
## [[482]]
## [1] -0.1219519
##
## [[483]]
## [1] -0.1219519
##
## [[484]]
## [1] -0.1219519
##
## [[485]]
## [1] -0.1219519
##
## [[486]]
## [1] -0.1219519
##
```

```
## [[487]]
## [1] -0.1219519
##
## [[488]]
## [1] -0.1219519
##
## [[489]]
## [1] -0.1219519
##
## [[490]]
## [1] -0.1219519
##
## [[491]]
## [1] -0.1219519
##
## [[492]]
## [1] -0.1219519
##
## [[493]]
## [1] -0.1219519
##
## [[494]]
## [1] -0.1219519
##
## [[495]]
## [1] -0.1219519
##
## [[496]]
## [1] -0.1219519
##
## [[497]]
## [1] -0.1219519
##
## [[498]]
## [1] -0.1219519
##
## [[499]]
## [1] -0.1219519
##
## [[500]]
## [1] -0.1219519
##
## [[501]]
## [1] -0.1219519
##
## [[502]]
## [1] -0.1219519
##
## [[503]]
## [1] -0.1219519
##
## [[504]]
## [1] -0.1219519
##
```

```

## [[505]]
## [1] -0.1219519
##
## [[506]]
## [1] -0.1219519
##
## [[507]]
## [1] -0.1219519
##
## [[508]]
## [1] -0.1219519
##
## [[509]]
## [1] -0.1219519
##
## [[510]]
## [1] -0.1219519
##
## [[511]]
## [1] -0.1219519
##
## [[512]]
## [1] -0.1219519
##
## [[513]]
## [1] -0.1219519
##
## [[514]]
## [1] -0.1219519
##
## [[515]]
## [1] -0.1219519
##
## [[516]]
## [1] -0.1219519
##
## [[517]]
## [1] -0.1219519
##
## [[518]]
## [1] -0.1219519
##
## [[519]]
## [1] -0.1219519
##
## [[520]]
## [1] -0.1219519
##
## [[521]]
## [1] -0.1219519
##
## [[522]]
## [1] -0.1219519
##

```

```
## [[523]]
## [1] -0.1219519
##
## [[524]]
## [1] -0.1219519
##
## [[525]]
## [1] -0.1219519
##
## [[526]]
## [1] -0.1219519
##
## [[527]]
## [1] -0.1219519
##
## [[528]]
## [1] -0.1219519
##
## [[529]]
## [1] -0.1219519
##
## [[530]]
## [1] -0.1219519
##
## [[531]]
## [1] -0.1219519
##
## [[532]]
## [1] -0.1219519
##
## [[533]]
## [1] -0.1219519
##
## [[534]]
## [1] -0.1219519
##
## [[535]]
## [1] -0.1219519
##
## [[536]]
## [1] -0.1219519
##
## [[537]]
## [1] -0.1219519
##
## [[538]]
## [1] -0.1219519
##
## [[539]]
## [1] -0.1219519
##
## [[540]]
## [1] -0.1219519
##
```

```

## [[541]]
## [1] B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3
## [26] B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2
## [51] B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1
## [76] B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1
## [101] B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3
## [126] B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2
## [151] B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2
## [176] B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1
## [201] B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3
## [226] B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3
## [251] B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2
## [276] B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1
## [301] B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1
## [326] B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3
## [351] B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2
## [376] B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2
## [401] B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1
## [426] B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3
## [451] B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3
## [476] B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2
## [501] B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3 B1 B1 B1
## [526] B2 B2 B2 B3 B3 B3 B1 B1 B1 B2 B2 B2 B3 B3 B3
## Levels: B1 B2 B3
##
## [[542]]
## NULL
##
## [[543]]
## [1] Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1
## [13] Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1 Sub1
## [25] Sub1 Sub1 Sub1 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2
## [37] Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2
## [49] Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub2 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3
## [61] Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3
## [73] Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub3 Sub4 Sub4 Sub4
## [85] Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4
## [97] Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4 Sub4
## [109] Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5
## [121] Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5 Sub5
## [133] Sub5 Sub5 Sub5 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6
## [145] Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6
## [157] Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub6 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7
## [169] Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7
## [181] Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub7 Sub8 Sub8 Sub8
## [193] Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8
## [205] Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8 Sub8
## [217] Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9
## [229] Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9 Sub9
## [241] Sub9 Sub9 Sub9 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10
## [253] Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub10
## [265] Sub10 Sub10 Sub10 Sub10 Sub10 Sub10 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11
## [277] Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11
## [289] Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub11 Sub12 Sub12 Sub12

```



```

## [301] Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12
## [313] Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12 Sub12
## [325] Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13
## [337] Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13 Sub13
## [349] Sub13 Sub13 Sub13 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14
## [361] Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14
## [373] Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub14 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15
## [385] Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15
## [397] Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub15 Sub16 Sub16 Sub16
## [409] Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16
## [421] Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16 Sub16
## [433] Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17
## [445] Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17 Sub17
## [457] Sub17 Sub17 Sub17 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18
## [469] Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18
## [481] Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub18 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19
## [493] Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19
## [505] Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub19 Sub20 Sub20 Sub20
## [517] Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20
## [529] Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20 Sub20
## 20 Levels: Sub1 Sub2 Sub3 Sub4 Sub5 Sub6 Sub7 Sub8 Sub9 Sub10 Sub11 ... Sub20
##
## [[544]]
## standardGeneric for "mean" defined from package "base"
##
## function (x, ...)
## standardGeneric("mean")
## <environment: 0x559fab866700>
## Methods may be defined for arguments: x
## Use showMethods("mean") for currently available ones.

```