

iemisc: Examples from GNU Octave Rem, Mod, and fractdiff Compatible Functions

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Rem Examples (R style)

```
library("iemisc")

# Examples from GNU Octave

x <- 23.4
y <- 20
z <- 0

Rem(x, y)

## [1] 3.4
Rem(y, x)

## [1] 20
Rem(x, z)

## [1] NaN
```

```

Rem(y, z)

## [1] NaN
Rem(z, x)

## [1] 0
Rem(z, y)

## [1] 0
Rem(-1, 3)

## [1] -1
# Examples from FreeMat

Rem(18, 12)

## [1] 6
Rem(6, 5)

## [1] 1
Rem(2 * pi, pi)

## [1] 0
Rem(c(1, 3, 5, 2), 2)

##      [,1] [,2] [,3] [,4]
## [1,]    1    1    1    0
Rem(c(9, 3, 2, 0), c(1, 0, 2, 2))

## [1]    0 NaN    0    0

```

rem Examples (GNU Octave style)

```

% check against GNU Octave

% Examples from GNU Octave

x = 23.4

y = 20

z = 0

rem(x, y)

rem(y, x)

rem(x, z)

```

```

rem(y, z)

rem(z, x)

rem(z, y)

rem(-1, 3)

% Examples from FreeMat

rem(18, 12)

rem(6, 5)

rem(2 * pi, pi)

rem([1, 3, 5, 2], 2)

rem([9 3 2 0], [1 0 2 2])

## x = 23.400
## y = 20
## z = 0
## ans = 3.4000
## ans = 20
## ans = NaN
## ans = NaN
## ans = 0
## ans = 0
## ans = -1
## ans = 6
## ans = 1
## ans = 0
## ans =
##
##      1      1      1      0
##
## ans =
##
##      0      NaN      0      0

```

Mod_octave Examples (R style)

```

library("iemisc")

# Examples from FreeMat

Mod_octave(6, 5)

```

```

## [1] 1
Mod_octave(2 * pi, pi)

## [1] 0
Mod_octave(c(1, 3, 5, 2), 2)

##      [,1] [,2] [,3] [,4]
## [1,]    1    1    1    0
Mod_octave(c(9, 3, 2, 0), c(1, 0, 2, 2))

## [1] 0 3 0 0
Mod_octave(-1, 3)

## [1] 2

```

mod Examples (GNU Octave style)

```

% check against GNU Octave

% Examples from FreeMat

mod(18, 12)

mod(6, 5)

mod(2*pi, pi)

mod([1, 3, 5, 2], 2)

mod([9 3 2 0], [1 0 2 2])

mod(-1, 3)

## ans = 6
## ans = 1
## ans = 0
## ans =
##
##      1    1    1    0
##
## ans =
##
##      0    3    0    0
##
## ans = 2

```

fractdiff Example (R style)

```
library("iemisc")
import::from(ramify, mat)

# values from https://github.com/simaki/fractdiff

a <- mat("1, 2, 4, 7, 0")

fractdiff(x = a, d = 0.5)

## [1] 1.000000 1.500000 2.875000 4.687500 -4.164062
```

fractdiff Example (GNU Octave style)

```
% check against GNU Octave

a = [1, 2, 4, 7, 0]

fractdiff(a, d = 0.5)

## a =
##
##    1    2    4    7    0
##
## ans =
##
##    1.0000    1.5000    2.8750    4.6875   -4.1641
```

Works Cited

John W. Eaton, David Bateman, Søren Hauberg, and Rik Wehbring (October 2021). *GNU Octave: A high-level interactive language for numerical computations: Edition 6 for Octave version 6.4.0*. <https://www.gnu.org/software/octave/octave.pdf>. Page 547.

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