

Package ‘schoolmath’

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Type Package

Title Functions and Datasets for Math Used in School

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Description Contains functions and datasets for math taught in school.

A main focus is set to prime-calculation.

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R topics documented:

schoolmath-package	2
cancel.fraction	2
decimal2fraction	3
gcd	4
is.decimal	4
is.even	5
is.negative	6
is.odd	6
is.positive	7
is.prim	8
is.real.positive	8
is.whole	9
prime.factor	10
primes	10
primlist	11
scm	11

Index**13**

schoolmath-package *Functions and datasets for math used in school*

Description

This package contains functions and datasets for math taught in school. A main focus is set to prime-calculation

Details

Package: schoolmath
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Author(s)

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cancel.fraction *cancel fractions to their simplest form*

Description

This function cancels a fraction to its simplest form, using greatest common divisor

Usage

```
cancel.fraction(numerator, denominator)
```

Arguments

numerator fraction's numerator
denominator fraction's denominator

Author(s)

Joerg Schlarmann

See Also[gcd](#)**Examples**

```
## to cancel fraction 42/56 type:  
cancel.fraction(42, 56)
```

decimal2fraction	<i>convert a decimal-number into fraction</i>
------------------	---

Description

This function converts a decimal number into a fraction

Usage

```
decimal2fraction(decimal, period = 0)
```

Arguments

decimal	the decimal number to be converted, given without an repeating ending
period	if the decimal places have an repeating ending (period), set the period here. See examples.

Author(s)

Joerg Schlarmann

Examples

```
## converting 23.4323  
decimal2fraction(23.4323)  
  
## converting a number with decimal period, e.g. 12.123444444444444444  
decimal2fraction(12.123, 4)
```

gcd

Greatest common divisor of two numbers

Description

This function gives the greatest common divisor of two numbers

Usage

```
gcd(x, y)
```

Arguments

x	first number
y	second number

Author(s)

Joerg Schlarmann

See Also

[scm](#)

Examples

```
gcd(42, 56)
```

is.decimal

check whether a vector contains numbers with decimal places

Description

This function checks, whether a vector contains numbers with decimal places. It returns TRUE or FALSE

Usage

```
is.decimal(x)
```

Arguments

x	a number or vector to be checked
---	----------------------------------

Author(s)

Joerg Schlarmann

See Also

[is.whole](#)

Examples

```
is.decimal(3) # this will return FALSE
is.decimal(2.01) # this will return TRUE

x <- c(1,2,3,4,5.5, 6.03, 23.07)
is.decimal(x)
```

is.even	<i>check whether numbers of a vector are even</i>
---------	---

Description

This function checks whether the numbers of a vector are even. It returns TRUE/FALSE

Usage

```
is.even(x)
```

Arguments

x A number or vector to be checked

Author(s)

Joerg Schlarmann

See Also

[is.odd](#)

Examples

```
is.even(3) # this will return FALSE
is.even(2) # this will return TRUE

x <- c(1,2,3,4,5, 6, 7)
is.even(x)
```

is.negative *check whether numbers of a vector are negative*

Description

This function checks whether the numbers of a vector are negative. It returns TRUE/FALSE

Usage

```
is.negative(x)
```

Arguments

x A number or vector to be checked

Author(s)

Joerg Schlarmann

See Also

[is.positive](#) [is.real.positive](#)

Examples

```
is.negative(3) # this will return FALSE
is.negative(-2) # this will return TRUE

x <- c(-1, -2, 3.02, 4, -5.2, 6, -7)
is.negative(x)
```

is.odd *check whether numbers of a vector are odd*

Description

This function checks whether the numbers of a vector are odd. It returns TRUE/FALSE

Usage

```
is.odd(x)
```

Arguments

x A number or vector to be checked

Author(s)

Joerg Schlarmann

See Also

[is.even](#)

Examples

```
is.odd(2) # this will return FALSE
is.odd(3) # this will return TRUE

x <- c(1,2,3,4,5, 6, 7)
is.odd(x)
```

<code>is.positive</code>	<i>check whether numbers of a vector are positive</i>
--------------------------	---

Description

This function checks whether the numbers of a vector are positive. It returns TRUE/FALSE.

Usage

```
is.positive(x)
```

Arguments

x A number or vector to be checked

Author(s)

Joerg Schlarmann

See Also

[is.negative](#) [is.real.positive](#)

Examples

```
is.positive(-3) # this will return FALSE
is.positive(2) # this will return TRUE

x <- c(-1, -2, 3.02, 4, -5.2, 6, -7)
is.positive(x)
```

is.prim	<i>check whether a vector contains prime-numbers</i>
---------	--

Description

This function checks, whether a vector contains prime-numbers. It returns TRUE or FALSE

Usage

```
is.prim(y)
```

Arguments

y a number or vector to be checked

Author(s)

Joerg Schlarmann

See Also

[primes](#)

Examples

```
is.prim(8) # this will return FALSE
is.prim(11) # this will return TRUE

x <- c(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)
is.prim(x)
```

is.real.positive	<i>check whether numbers of a vector are real positive</i>
------------------	--

Description

This function checks whether the numbers of a vector are positive. It returns TRUE/FALSE. Real positive means, that zero is included as a positive number.

Usage

```
is.real.positive(x)
```


Arguments

x A number or vector to be checked

Author(s)

Joerg Schlarmann

See Also

[is.negative](#) [is.positive](#)

Examples

```
is.real.positive(-3) # this will return FALSE
is.real.positive(0)  # this will return TRUE

x <- c(0, -1, -2, 3.02, 4, -5.2, 6, -7)
is.real.positive(x)
```

is.whole *check whether a vector contains numbers with decimal places*

Description

This function checks, whether a vector contains whole numbers without decimal places. It returns TRUE or FALSE

Usage

```
is.whole(x)
```

Arguments

x a number or vector to be checked

Author(s)

Joerg Schlarmann

See Also

[is.decimal](#)

Examples

```
is.whole(3.12) # this will return FALSE
is.whole(2)    # this will return TRUE

x <- c(1, 2, 3, 4, 5.5, 6.03, 23.07)
is.whole(x)
```

prime.factor	<i>giving prime-factors of a number</i>
--------------	---

Description

This function calculates the prime-factors of a number

Usage

```
prime.factor(n)
```

Arguments

n the number to be checked

Author(s)

Joerg Schlarmann

Examples

```
prime.factor(21)
prime.factor(100)
```

primes	<i>generate prime-numbers</i>
--------	-------------------------------

Description

This function generates prime-numbers, which can be found between a start- and an end-number.

Usage

```
primes(start = 12, end = 9999)
```

Arguments

start start-number
end end-number

Author(s)

Joerg Schlarman

See Also

[is.prim](#)

Examples

```
primes(12,150) # list prime-numbers between 12 and 150
```

<code>primlist</code>	<i>prime-numbers between 1 and 9999999</i>
-----------------------	--

Description

This is a list of prime-numbers between 1 and 9999999

Usage

```
primlist
```

Format

a vector containing a list of prime-numbers between 1 and 9999999

<code>scm</code>	<i>calculating the smallest common multiple of two numbers</i>
------------------	--

Description

This function calculates the smallest common multiple (least common multiple) of two numbers

Usage

```
scm(x, y)
```

Arguments

x	first number
y	second number

Author(s)

Joerg Schlarmann

See Also

[gcd](#)

Examples

```
scm(3528, 3780)
```

Index

- * **datasets**
 - primlist, 11
- * **logic**
 - is.decimal, 4
 - is.even, 5
 - is.negative, 6
 - is.odd, 6
 - is.positive, 7
 - is.prim, 8
 - is.real.positive, 8
 - is.whole, 9
- * **math**
 - cancel.fraction, 2
 - decimal2fraction, 3
 - gcd, 4
 - prime.factor, 10
 - primes, 10
 - scm, 11
- * **package**
 - schoolmath-package, 2

cancel.fraction, 2

decimal2fraction, 3

gcd, 3, 4, 12

is.decimal, 4, 9

is.even, 5, 7

is.negative, 6, 7, 9

is.odd, 5, 6

is.positive, 6, 7, 9

is.prim, 8, 11

is.real.positive, 6, 7, 8

is.whole, 5, 9

prime.factor, 10

primes, 8, 10

primlist, 11

schoolmath (schoolmath-package), 2