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Bernoulli {Rlab}

The Bernoulli Distribution

`Package: Rlab`
Version: 2.15.1

Description

Density, distribution function, quantile function and random generation for the Bernoulli distribution with parameter `prob`.

Usage

```
dbern(x, prob, log = FALSE)
pbern(q, prob, lower.tail = TRUE, log.p = FALSE)
qbern(p, prob, lower.tail = TRUE, log.p = FALSE)
rbern(n, prob)
```

Arguments

`x, q`
vector of quantiles.

`p`
vector of probabilities.

`n`
number of observations. If `length(n) > 1`, the length is taken to be the number required.

`prob`
probability of success on each trial.

`log, log.p`
logical; if TRUE, probabilities p are given as log(p).

`lower.tail`
logical; if TRUE (default), probabilities are P[X <= x], otherwise, P[X > x].

Details

The Bernoulli distribution with `prob` = p has density for x = 0 or 1.

If an element of x is not or 1, the result of `dbern` is zero, without a warning. p(x) is computed using Loader's algorithm, see the reference below.

The quantile is defined as the smallest value x such that F(x) ≥ p, where F is the distribution function.

Values

`dbern` gives the density, `pbern` gives the distribution function, `qbern` gives the quantile function and `rbern` generates random deviates.

References

Catherine Loader (2000). *Fast and Accurate Computation of Binomial Probabilities*; manuscript available from http://cm.bell-labs.com/cm/ms/departments/sia/catherine/dbinom

See Also

`dbinom` for the binomial (Bernoulli is a special case of the binomial), and `dpois` for the Poisson distribution.

Examples

```
# Compute P(X=1) for X Bernoulli(0.7)
dbern(1, 0.7)
```

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