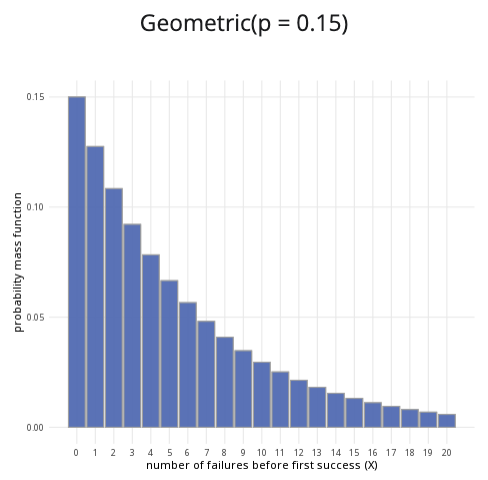
Factsheet: Geometric distribution

Michelle Arnetta and Tom Coleman

Summary

A factsheet for the geometric distribution.



An example of the geometric distribution with .

**Where to use:** The geometric distribution is used to count , the number of Bernoulli trials until a successful outcome is reached.

**Notation:**

**Parameter:** is the real number representing the probability of success in a single trial (where ).

| Quantity | Value | Notes |
| --- | --- | --- |
| **Mean** |  |  |
| **Variance** |  |  |
| **PMF** |  |  |
| **CDF** |  |  |

**Example:** You flip a coin multiple times, and the probability of getting ‘heads’ is . You decide to stop flipping the coin once you get a ‘heads’. Taking ‘heads’ as a success, this can be expressed as . It means the probability of success is , and you will stop conducting trials after you reach a success.

# Further reading

[This interactive element appears in Overview: Probability distributions. Please click this link to go to the guide.](../overviews/o-distributions.qmd)

## Version history

v1.0: initial version created 04/25 by tdhc and Michelle Arnetta as part of a University of St Andrews VIP project.

* v1.1: moved to factsheet form and populated with material from [Overview: Probability distributions](../overviews/o-distributions.qmd) by tdhc.

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